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**SEMI-ANNUAL PROGRESS REPORT NUMBER 14**

**(Operating Period January 1, 2002 through June 30, 2002)**

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**Prepared For:**  
**Non-City RD/RA Settlors**  
**Wayne Reclamation and Recycling, Inc. Wayne Waste Oil Site**  
**Columbia City, Indiana**

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**September 2002**



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## LIST OF ACRONYMS

AST	Aboveground Storage Tank
cfm	cubic feet per minute
DCE	dichloroethene
DQO	Data Quality Objective
ECAO	Environmental Criteria Assessment Office
ft	feet
gpd	gallons per day
gpm	gallons per minute
HEAST	Health Assessment Summary Tables
HDPE	high-density polyethylene
InSite	InSite, Incorporated
IDEM	Indiana Department of Environmental Management
IRIS	Integrated Risk Information System
ISC-LT	Industrial Source Complex-Long Term
lb.	pound
MWH	Montgomery Watson Harza
O&M	Operation and Maintenance
OM&M Plan	Operation, Monitoring, and Maintenance Plan
PCE	tetrachloroethene
PCB	polychlorinated biphenyl
PID	photoionization detector
POTW	publicly-owned treatment works
ppb	parts per billion
ppm	parts per million
PRG	Preliminary Remediation Goal
QAPjP	Quality Assurance Project Plan
QC	quality control
RD/RA	Remedial Design/Remedial Action
scfm	standard cubic feet per minute
SE	Southeast
SVE	soil vapor extraction
U.S. EPA	United States Environmental Protection Agency
TCE	trichloroethene
ug/kg	micrograms per kilogram
ug/L	micrograms per liter
v/v	volume per volume basis
VOC	volatile organic compound
VC	vinyl chloride
Weston	Roy F. Weston
WRR	Wayne Reclamation & Recycling

## 1.0 INTRODUCTION

This document is submitted on behalf of the Non-City Remedial Design/Remedial Action (RD/RA) Settlors. It is intended to summarize operations of the remediation system constructed by the Non-City RD/RA Settlors at the Wayne Reclamation & Recycling (WRR) site (a.k.a., the Wayne Waste Oil Site) located in Columbia City, Indiana for the reporting period of January 1, 2002 through June 30, 2002. Included in this document is a description of the system optimization and testing activities that have occurred during the reporting period, as well as the on-going evaluation of the remediation system performance.

This document is organized as follows:

- *Section 2 Monitoring and Optimization Testing*
- *Section 3 Soil Vapor Extraction System*
- *Section 4 Air Sparging System*
- *Section 5 Groundwater Extraction System*
- *Section 6 Off-Gas Treatment System*
- *Section 7 Groundwater Pre-Treatment System*
- *Section 8 Conclusions and Recommendations*

This document is intended to supplement information presented in previous Semi-Annual Progress Reports.

### 1.1 BACKGROUND

Construction of the remediation system at the WRR site took place from June 1994 through January 1995. The remediation system was constructed to remove volatile organic compounds (VOCs) from site soils and groundwater. The system includes:

- A 2,400 standard cubic feet per minute (scfm) soil vapor extraction (SVE) system and a 100 scfm air sparging system (nominal rates);

- A 150-gallon per minute (gpm) design capacity groundwater extraction system, including a 1,600-foot (ft) long soil-bentonite cut-off wall (i.e., slurry wall);
- A 3,200 scfm off-gas treatment system, which was removed from service effective June 24, 1999; and
- A groundwater treatment system, including a 5,800-ft long force main that delivers treated groundwater to the Columbia City publicly-owned treatment works (POTW)/wastewater treatment plant.

A site layout for the three primary components of the remediation system, including the groundwater recovery system, the SVE system, and the air sparging system, are indicated on Figures 1, 2, and 3, respectively.

A Prefinal Inspection of the remediation system was held with the United States Environmental Protection Agency (U.S. EPA) on January 27, 1995. The Final Inspection with the U.S. EPA was conducted on May 18, 1995. The system was operated in startup/shakedown mode from January 1995 through September 1995, pending approval of the *Final - Operations, Maintenance, and Monitoring Plan* (OM&M Plan) (Montgomery Watson, September 1995). U.S. EPA approval of the OM&M Plan was granted on September 27, 1995. In addition, U.S. EPA approval of the *Interim Remedial Action Report* (Montgomery Watson, August 1995) was granted on September 29, 1995.

Roy F. Weston (Weston) of Vernon Hills, Illinois (remediation system general contractor) acted as system operator after the completion of system construction activities that occurred from September 1995 to January 31, 1998. Weston subcontracted the majority of the operation and maintenance (O&M) activities to InSite, Incorporated (InSite) of Fort Wayne, Indiana. Montgomery Watson (system designer) was responsible for collecting air and water samples in accordance with the approved OM&M Plan during Weston's operation of the system. As of February 1, 1998, Montgomery Watson replaced Weston as

the system operator and retained InSite to perform the day-to-day system operation. Montgomery Watson and InSite continue to operate, maintain, monitor, and optimize system performance. Please note that as of June 21, 2001, Montgomery Watson became Montgomery Watson Harza (MWH).

Additional information on the remediation system can be found in the following reports:

- *Final Design Evaluation* (Warzyn, November 19, 1993);
- *Interim Remedial Action Report* (Montgomery Watson, August 1995);
- *Final - Operations, Maintenance, and Monitoring Plan* (Montgomery Watson, September 1995) and Addendum (Montgomery Watson, July 1999).
- *Final - Operations and Maintenance Quality Assurance Project Plan (QAPjP)* (Montgomery Watson, September 1995) and Addendum (Montgomery Watson, July 1999).
- *Technical Memorandum Number One* (Montgomery Watson, February 12, 1996);
- *Technical Memorandum Number Two* (Montgomery Watson, November 1996);
- *Semi-Annual Progress Report Number 3* (Montgomery Watson, August 1997);
- *Semi-Annual Progress Report Number 4* (Montgomery Watson, November 1997);
- *Semi-Annual Progress Report Number 5* (Montgomery Watson, April 1998);
- *Semi-Annual Progress Report Number 6* (Montgomery Watson, September 1998);
- *Semi-Annual Progress Report Number 7* (Montgomery Watson, March 1999);
- *Semi-Annual Progress Report Number 8* (Montgomery Watson, August 1999);
- *Semi-Annual Progress Report Number 9* (Montgomery Watson, March 2000);
- *Semi-Annual Progress Report Number 10* (Montgomery Watson, October 2000);
- *Semi-Annual Progress Report Number 11* (Montgomery Watson, March 2001);
- *Semi-Annual Progress Report Number 12* (Montgomery Watson Harza, September 2001); and
- *Semi-Annual Progress Report Number 13* (MWH, April 2002).

## **2.0 MONITORING AND OPTIMIZATION TESTING**

Initial monitoring and optimization testing of the WRR remediation system commenced in early 1995 during the startup/shakedown mode of system operations. Additional monitoring and system optimization testing has continued throughout the duration of the system operation. This monitoring and testing was conducted primarily to evaluate the performance of the remediation system in removing VOCs from site soils and groundwater, as well as to address the monitoring and testing requirements set forth in the site OM&M Plan. The monitoring, optimization testing, and associated activities conducted are discussed in the following sections.

### **2.1 MONITORING**

The primary monitoring and associated activities conducted throughout remediation system operations are discussed below:

- Historically, air treatment system monitoring included monthly influent and effluent vapor sample collection and analysis. On June 24, 1999 the air treatment system was taken off-line. As of July 1999, only the SVE system effluent (equivalent to the former air treatment system influent) is collected and analyzed on a monthly basis. Monthly samples were collected and analyzed for VOCs during this reporting period. Results of the SVE effluent sampling are used in air dispersion modeling and on-going assessment of cumulative risks for exposure to carcinogens.
- Monthly groundwater treatment system monitoring is conducted at the site, including influent and effluent groundwater sample collection and analysis. Monthly samples were collected during this reporting period for the groundwater treatment system influent and effluent. The samples were analyzed for VOCs. Additionally, samples of the groundwater treatment system effluent are collected on an annual basis and are analyzed for total metals, inorganics, and polychlorinated biphenyls (PCBs). Results of

the groundwater treatment system sampling are used to monitor groundwater treatment system efficiency, and to provide effluent quality information to the Columbia City POTW.

- Recovery well samples are collected and analyzed on a periodic basis, primarily during the fall semi-annual sampling event; the recovery wells were not sampled during this reporting period. Results of the recovery well sampling are used to monitor changes in aquifer groundwater concentrations and to assess VOC mass removal rates from the aquifer.
- Semi-annual groundwater monitoring well sample collection and analysis is conducted for the site's groundwater monitoring network. Samples were collected from MW4S, MW9S, MW10S, MW13S, MW14S, MW83AS, and MW83DS during this reporting period, and analyzed for VOCs and metals. Results of the groundwater monitoring well sampling are used to assess effectiveness of the remediation system operations and evaluate the progress of the site toward cleanup and attainment of remedial goals.
- Annual Columbia City municipal drinking water well sample collection and analysis is performed for Municipal Well Number 7 and Municipal Well Number 8, typically during the fall semi-annual sampling event. The municipal drinking water wells were not sampled during this reporting period.
- Sampling of the wells monitored by Columbia City (GM-1 through GM-4) was also conducted during this reporting period. The data from the report, dated May 14, 2002, by Burgess and Niple, is included as Appendix B. Access to the sampling data from these wells allows for comparison with closely-associated wells on the site.

## 2.2 OPTIMIZATION TESTING

The primary optimization activities which have been conducted throughout remediation system operations include:

- Semi-annual SVE well vacuum pressure and flow measurements, as appropriate, to adequately balance SVE system flowrates. Vacuum pressures and flow measurements were collected during this reporting period at the site's 56 SVE wells.
- Semi-annual SVE branch line and header line VOC measurements, as appropriate, to adequately focus treatment on those areas exhibiting the highest indicated VOC vapor concentrations. Field readings for trichloroethene (TCE) and vinyl chloride (VC), and photoionization detector (PID) readings, were recorded during this reporting period for the six branch lines of the SVE system.
- Semi-annual SVE monitoring point vacuum pressure measurements, to determine any major changes in SVE radius-of-influence. Vacuum pressure measurements were collected during this reporting period at the site's 23 SVE monitoring points.
- Semi-annual air sparge well air injection pressure and flowrate checks are conducted to determine any major changes in the ability to inject air into the saturated zone in the Southeast (SE) area. Air injection pressures and flowrates were recorded during this reporting period for the site's 40 air sparging wells.
- Semi-annual dissolved oxygen level checks in the monitoring wells and groundwater recovery wells located within the boundary of the slurry wall where air sparging is conducted. Dissolved oxygen measurements were collected at five groundwater monitoring well locations and at six recovery well locations during this reporting period.

- Monthly groundwater elevation measurements, to determine groundwater remediation system capture zones and to assess vertical hydraulic gradients in the SE area. Monthly groundwater elevation readings were collected during this reporting period at the site's groundwater monitoring wells and piezometers.

The results of the above monitoring and system optimization activities are discussed in the following sections of this report.

### **2.3 DATA VALIDATION SUMMARY**

Air samples, groundwater samples, and associated quality control (QC) samples were collected from the Wayne Reclamation site in Columbia City, Indiana, from January through June of 2002. The air samples were analyzed by Pace Analytical, Inc., for VOCs by method TO-14. The water samples were analyzed by Test America Laboratories, Inc., Indianapolis, Indiana, for one or more of the following parameters: VOCs by U.S. EPA method SW-846 8260B, cyanide by U.S. EPA method SW-846 9012A, and dissolved metals by U.S. EPA SW-846 methods 6010B (arsenic, barium, cadmium, chromium, lead, nickel, and zinc). Analytical results were evaluated in accordance with the data quality objectives (DQOs). The analytical data were validated and qualified based on the results of the data evaluation parameters and/or the QC sample results provided by the laboratory. Raw data was not reviewed. Review of the analytical data indicates it met the quality control criteria.

Based on the results of this data validation, all data are considered valid and complete as qualified.

## 3.0 SOIL VAPOR EXTRACTION SYSTEM

### 3.1 SYSTEM DESCRIPTION

The SVE system was constructed to remove VOCs from the vadose (unsaturated) zone. The system consists of 41 SVE wells in the SE area and 15 SVE wells in the Aboveground Storage Tank (AST) area (Figure 2). VOCs are removed from the vadose zone via vacuum blowers housed in the on-site treatment building. Extracted vapors are routed from the SVE wells to the on-site treatment system through underground high-density polyethylene (HDPE) piping. Each SVE well is equipped with a shut-off valve and an air velocity measurement port/vapor sample tap.

In the SE area of the site, the SVE wells are grouped together into one of six branch lines. Six to eight SVE wells are attached to each branch line. As shown on Figure 2, the six branch lines are designated as Branches A, B, C, D, E, and F. The six branch lines connect to one main trunk line that conveys extracted vapors to the treatment building. Operation of individual SVE wells is controlled manually by a shut-off valve located at each well. Operation of groups of SVE wells is currently controlled manually by a valve at the head of each branch line.

In the AST area, each SVE well is connected via underground piping to one of two branch lines that convey extracted vapors to the treatment building. As shown on Figure 2, these branch lines are designated as Branch G and Branch H. Automatic control valves located in the treatment building control operation of Branches G and H.

In both the SE and AST areas, cycling of the SVE branch lines began on May 1, 1998. The purpose of this cycling is to improve system operations by avoiding the formation of long-term preferred vapor flowpaths, thereby maximizing VOC removal.

During current cycling procedures, effective as of September 17, 2001, two of the six branch lines are operated simultaneously in the SE area. The set of two branch lines

operating is rotated approximately once per week. In the AST area, operation of Branches G and H is rotated approximately once per week.

Pressure probes are located throughout the SE and AST areas. These pressure probes provide monitoring points where vacuums exhibited in the vadose zone can be measured to evaluate the SVE system radius-of-influence. Several of the pressure probe locations are nested (i.e., both a shallow and a deep probe exist at the nested locations). In addition, monitoring wells screened at least partially in the vadose zone can also function as SVE vacuum monitoring points.

### **3.2 MONITORING AND OPTIMIZATION TESTING RESULTS**

Results of the SVE system monitoring and optimization testing, which was conducted during this reporting period, indicate:

- During the period of January 2002 through June 2002, the SVE system was operational for approximately 97.8% of the time (i.e., % of total hours available). Downtime events were primarily related to standard regularly scheduled operation and maintenance activities, instrumentation and control repairs, and occasional power outages.
- Vacuum pressures recorded from the SE area SVE wells in April 2002 ranged from 6 to approximately 29 inches of water column. Vacuum pressures recorded at the SVE wells in the AST area ranged from 7 to approximately 18 inches of water column. Vacuum pressure measurements are summarized in Table 1.
- The flow rates recorded in April 2002 at the SVE wells ranged from approximately 15 to 100 cubic feet per minute (cfm) from the SE area wells. The SE area flowrate was approximately 2,600 cfm (total of 6 branch line measurements made in SE area) and the AST area flowrate was approximately 245 cfm. Flow rate measurements collected during April 2002 are summarized in Table 1.

- Vacuum pressures measured at the SE area monitoring points (other than SVE wells) during April 2002 ranged from 0 to approximately 1.45 inches of water column. Vacuum measurements collected in the SE area continue to indicate the SVE system is either meeting or exceeding design expectations. Vacuum pressures measured at monitoring points (other than SVE wells) in the AST area ranged from 0 to approximately 1.25 inches of water column. Vacuum measurements in the monitoring points collected during April 2002 are summarized in Table 2.
- During this reporting period, the greatest SVE VOC concentrations were noted from Branch B in the SE area. Vapor concentrations have changed over time as more VOC mass is removed from the site soils and groundwater. Future treatment system operations will continue to focus on optimizing this removal. Relative to the AST area, the SE area continues to contribute the majority of the VOCs to the treatment system. For the SE area, PID and colorimetric tube measurements collected during April 2002 are summarized in Table 3. Laboratory analytical/Summa Canister data collected in April 2002 is summarized on Table 6.

### **3.3 PROGRESS TOWARD REMEDIAL OBJECTIVES**

Based on analytical results of SVE system effluent air samples collected during the reporting period, it is estimated that approximately 11,190 pounds (lbs.) of VOCs have been removed via the SVE system from site vadose zone soils. Initial mass removal rates observed at the commencement of SVE system operations were approximately 83 lbs. of total VOCs per day. As of June 2002, removal rates for the SVE system were approximately 1.4 lbs. total VOCs per day or approximately 1.8% of initial removal rates. This equates to an 89.2% reduction in VOC contributions from the SVE system. This decrease in VOC concentrations can be noted on Figure 5, which represents a summary of the air treatment system effluent data.

The primary objective of the SVE system operation is to remove VOCs from site soils in order to attain vadose zone soil Preliminary Remediation Goals (PRGs), or alternative cleanup levels, as indicated in the OM&M Plan. For example, soil PRGs for the SE area are 37.1 micrograms per kilogram (ug/kg) for VC, 186.3 ug/kg for 1,2-dichloroethene (1,2-DCE), 67.1 ug/kg for tetrachloroethene (PCE), and 19.7 ug/kg for TCE. Confirmatory soil sampling will not commence until SVE influent concentrations reach an asymptotic value.

## 4.0 AIR SPARGING SYSTEM

### 4.1 SYSTEM DESCRIPTION

The air sparging system was constructed to facilitate removal of VOCs from site soils and groundwater. The air sparging system is intended to work in combination with the SVE and groundwater systems in the removal of VOCs from the site subsurface. The system consists of 40 sparging clusters located in the SE area of the site as indicated on Figure 3. A sparging cluster is located adjacent to each SVE well. Compressed air is delivered from the sparging compressor in the treatment building to the sparging wells through HDPE piping located underground.

Each air sparging cluster consists of two air sparging wells (i.e., a shallow well and a deep well). The shallow/deep cluster was installed to provide treatment of soils above and below the thin clay layer, which is located at approximately 20 to 25 ft below ground surface. The shallow air sparging well is installed such that its screen is set at the top of the thin clay layer. The deeper air sparging well is set with its screen at the base of the upper aquifer. Each well is instrumented with an air flow rotameter, ball valve, and pressure gauge. Effective September 17, 2001, air sparging in the deeper wells was temporarily discontinued. Currently, two air sparging branch lines are operated simultaneously, corresponding to the two operating SVE branch lines. The lines are rotated approximately once per week, consistent with the rotation of the SVE lines. During operation, the air sparging system runs on a 4-hour on/off cycle (i.e., 4 hours ON followed by 4 hours OFF).

The sparge wells are manifolded and controlled in a manner similar to the SVE system. Compressed air is supplied from the sparging compressor in the treatment building to the SE area through a two-inch diameter HDPE line. As shown on Figure 3, Branch lines A, B, C, D, E, and F leave the trunk line to feed the air sparging wells. Operation of the branch lines is controlled by a control valve at the head of each branch line.

#### 4.2 OPTIMIZATION TESTING RESULTS

Results of the air sparging system optimization testing, which was conducted in April 2002, indicate:

- During the period of January 2002 through June 2002, the air sparging system was operational for approximately 84.5% of the total hours available. The majority of the downtime during this time period was incurred when the air sparging compressor was down for repair; additional downtime was related to standard regularly scheduled operation and maintenance activities, and occasional power outages.
- The airflow rate to the shallow sparging wells was estimated to be between 1 and 3 cfm for all but three of the wells. Due to degradation by sunlight or dirt, the flow meters could not be read at 37 of the wells. Corresponding injection pressures for the shallow wells ranged between 4 pounds per square inch (psi) and 15 psi. Air flow and injection pressure measurements collected in April 2002 are summarized in Table 4.
- Dissolved oxygen level measurements collected during the reporting period are summarized in Table 5. The indicated values are relatively consistent with the previous sampling event conducted in October 2001. Although dissolved oxygen levels are expected to increase as contaminant levels are reduced in the aquifer, the dissolved oxygen data does not directly correlate with groundwater concentrations. Generally, monitoring points impacted with VOCs will have lower dissolved oxygen levels than non-impacted monitoring points.
- As a means of measuring the contribution of VOC removal by the air sparging system, vapor samples have historically been collected from the SE area's SVE main trunk line with the air sparging system "ON" and "OFF." During this reporting period, vapor samples were collected via Summa Canisters, with the air

sparging system "ON" (sample composited on April 23 and 24, 2002) and "OFF" (sample composited on April 26 and 27, 2002). The results for these and other historical samples are summarized in Table 6.

- In order to potentially improve VOC removal, sparging in the deeper air sparging wells was temporarily discontinued effective September 17, 2001. It is believed that the deeper area may be experiencing anaerobic degradation of VOC impacts; therefore, discontinuing the deep air sparging may increase VOC degradation. Results collected during the reporting period do not indicate a significant change, with respect to the SVE vapor concentrations, with the deep air sparging wells turned off. Operation of the system will continue with deep wells turned off, to enable additional data to be gathered.

#### **4.3 PROGRESS TOWARD REMEDIAL OBJECTIVES**

The primary remedial objective of the air sparging system is for the removal of dissolved-phase VOCs from the saturated zone in the SE area of the site, located within the confines of the barrier wall. VOC removal is measured using a PID, colorimetric tubes, and Summa Canisters. Results of the field measurements for air quality are presented in Table 3. Analytical results for the air samples collected via Summa Canisters are presented in Table 6. Testing results collected to date suggest that the air sparging system is supporting the remedial objective. In general, monitoring wells in the SE area have shown significant reductions in VOC concentrations since commencement of remediation system operations.

A historical representation of the concentration of total VOCs, as recorded during Summa Canister sampling, is provided in Figure 9. The graph depicts the effect of the air sparge system on VOC removal. Samples are collected with the air sparge system operating, and then a short time later with the air sparge system suspended. Review of the sample results

indicates that the air sparge system's impact on VOC removal has varied throughout system operations, but the overall trend is decreasing.

Under current operating procedures, only the shallow air sparging wells are operated. During operation, the air sparging system functions under a pulsed mode, which consists of operating two of the six branch lines at a time (two lines on, four lines off). The two branch lines are rotated into service approximately once every week. Additionally, during operation of the two selected branch lines, the air injection is cycled approximately every four hours (i.e., air is injected for four hours and then turned off for four hours, then the cycle is repeated).

Continued reductions in dissolved phase VOC concentrations have been noted at the monitoring wells located in the SE area since initial operation of the treatment system (see Table 10). Fluctuations in dissolved phase VOCs have been noted in all monitoring wells and recovery wells located in the SE area. These fluctuations are likely due to the non-homogeneous nature of the saturated zone in the SE area and the differing rates of treatment likely occurring across the area.

Development of the groundwater PRGs are detailed in the *Final Operation and Maintenance Quality Assurance Project Plan* (Montgomery Watson, September 1995). The most conservative PRGs for the commonly detected constituents of concern are 0.0283 micrograms per liter (ug/L) for VC, 1.43 ug/L for PCE, 2.54 ug/L for TCE, 70 ug/L for cis-1,2-DCE, and 100 ug/L for trans-1,2-DCE.

## 5.0 GROUNDWATER EXTRACTION SYSTEM

### 5.1 SYSTEM DESCRIPTION

The groundwater extraction system was constructed to capture and control groundwater impacted with VOCs. The groundwater extraction system consists of 10 groundwater recovery wells installed in three areas of the site as follows: three recovery wells in the AST area (RW1-RW3), one recovery well in the monitoring well MW7S area (RW4), and six recovery wells in the SE area (RW5-RW10); see Figure 1. The extraction system also employs the use of a soil bentonite cut-off wall (i.e., slurry wall), constructed to reduce the pumping rate necessary to produce an upward vertical gradient component to the groundwater flow in the SE area. Extracted groundwater is pumped to the on-site treatment building through underground HDPE piping.

### 5.2 MONITORING AND OPTIMIZATION TESTING RESULTS

Results of the groundwater extraction system monitoring and optimization testing, which was conducted during the reporting period, indicate:

- During the period of January 2002 through June 2002, the groundwater extraction system was operational for approximately 97.8% of the time (i.e., % of total hours available). Primary downtime events were related to on-going routine cleaning of individual recovery pumps and underground collection piping, occasional power outages, and routine maintenance.
- The maximum sustained groundwater recovery rate, for periods of at least 24 hours, during the reporting period was approximately 77.1 gpm in January 2002 (i.e., 111,000 gallons per day [gpd]). During the reporting period, a total of 15,621,000 gallons of groundwater were recovered and treated. The largest total monthly flow was reported at 2,820,000 gallons, for the month of May 2002. The highest average daily recovery rate during the reporting period

was 93,867 gpd, which was reported during the month of April 2002. This average was calculated by dividing the total monthly flow by the total number of operational days for the month. Continued cleaning of recovery well pump assemblies and groundwater collection piping has enabled system groundwater recovery rates to maintain an inward and vertically upward gradient in the SE area. A summary of system flowrates is included in Table 7. Figure 10 is a comparison of cumulative versus the average daily groundwater recovery rates. As of June 2002, a cumulative total of 159,940,521 gallons of groundwater had been recovered, treated, and discharged to the Columbia City POTW.

- Capture of site groundwater (as measured by drawdown in site monitoring wells) is being achieved across the site. Water level elevation data collected during the reporting period is used to evaluate the groundwater table drawdown. This data is included in Table 8 (monitoring well construction details) and Table 9 (groundwater elevation information). Groundwater contour maps that show representations of the water elevations observed in the SE area during each month of the reporting period have been prepared as Figure 4-1 through Figure 4-6.
- Historical sample results from the annual sampling of the Columbia City municipal drinking water wells located to the north of the WRR site can be found in Tables 17 and 18. No sampling of the municipal drinking water wells was conducted during this reporting period. The historical data indicates that no detectable concentrations of constituents attributable to the WRR site have been found in the municipal wells.

### **5.3 PROGRESS TOWARD REMEDIAL OBJECTIVES**

The primary remedial objectives of the groundwater extraction system are to remove dissolved phase contamination from the saturated zone and maintain hydraulic control within the upper aquifer on site, thereby preventing the potential off-site migration of

dissolved phase constituents to the Blue River or Columbia City municipal well field. Mass removal rates from the groundwater extraction system have ranged from approximately 0.8 lbs. to 1.8 lbs. of VOCs removed per day during the reporting period.

Groundwater elevation data indicates that the slurry wall/groundwater extraction system is effectively maintaining an inward gradient in the SE area. Monthly water elevations collected during the reporting period indicate a consistent inward gradient in the SE area. For example, the April 2002 elevations within the confines of the slurry wall are approximately 3.3 feet lower than water elevations immediately outside the slurry wall (monitoring wells MW11S and MW13S on Table 9 and Figure 4-4).

Pre-pumping water level elevations in MW83AS and MW83AD, located within the confines of the slurry wall, suggest a downward vertical gradient. Upon startup of remediation system pumping in 1995, water level data indicate a shift in this position with an upward vertical gradient noted between MW83AS and MW83AD. Data collected during January 2002 through June 2002 indicate that an upward gradient was maintained in the SE area throughout the reporting period, with the exception of April 2002, which indicates a slight downward gradient. Operation and maintenance activities, including on-going recovery pump and groundwater collection pipe cleaning, have helped increase groundwater system recovery rates to maintain an upward vertical gradient in the SE area. Based on the historical observations of groundwater extraction system performance, maintenance of the groundwater extraction system will be conducted frequently (i.e., approximately once per quarter) in order to maintain hydraulic control.

The monitoring wells currently included in the semi-annual or annual sampling program, per the requirements of the OM&M QAPjP, are MW1D, MW3S, MW4S, MW7S, MW9S, MW10S, MW11S, MW14S, MW15S, MW16S, MW83AS, MW83AD, and MW83B. During the reporting period, monitoring wells MW4S, MW9S, MW10S, MW13S, MW14S, MW83AS, and MW83DS were sampled. A summary of monitoring well VOC

and metals analytical data collected to date is included in Table 10. Copies of laboratory analytical reports are available upon request.

The most recent groundwater sampling event, conducted in April 2002, indicates that total VOCs have continued in a general decreasing concentration trend. The total VOCs have decreased from 142,802 ug/L (total for all wells sampled) in the August 1988 sampling event to 20,732 ug/L in the April 2002 sampling event. This represents a decrease of approximately 86% since system start-up. Data trends are discussed in Section 7.

A summary of historic recovery well VOC analytical data is included in Table 12. The most highly impacted recovery wells are located within the confines of the slurry wall (RW8, RW9, and RW10).

## 6.0 OFF-GAS TREATMENT SYSTEM

### 6.1 SYSTEM DESCRIPTION

The off-gas treatment system was constructed and operated to remove VOCs from the off-gases of the air stripping tower and the SVE system prior to discharge to the atmosphere. On June 24, 1999, air treatment was discontinued; however, monthly air sampling continues to be conducted on the effluent air stream as a means of monitoring potential risk levels associated with the untreated air stream. Upon entering the treatment building, the combined air stream of the air stripping tower and the SVE system is drawn through an air filter and moisture separator by two 100-horsepower, multistage, centrifugal blowers connected in parallel. After exiting the blowers, the untreated air stream passes through a heat exchanger prior to discharge to the atmosphere.

### 6.2 MONITORING AND OPTIMIZATION TESTING RESULTS

Monitoring and optimization testing conducted to date, including the monthly SVE system effluent sampling (which includes air stripping system off-gases), indicate:

- Monthly effluent vapor concentrations have decreased by more than one order of magnitude from the beginning of system operations in early 1995 to June 2002. Total VOCs in the air stream have dropped from approximately 83,300 parts per billion (ppb) volume/volume basis (v/v) in March 1995 to 2,411 ppb (v/v) in June 2002. During the same time period, VC concentrations have decreased from approximately 1,900 ppb (v/v) to 220 ppb (v/v), TCE concentrations have decreased from 28,000 ppb (v/v) to 290 ppb (v/v), and cis-1,2-DCE concentrations have decreased from approximately 40,000 ppb (v/v) to 1,200 ppb (v/v). The historic monthly air treatment system influent and effluent sampling results are summarized on Table 13 and on Figure 5. Tables 13 and 14 also include the monthly effluent-only sample results collected since the air treatment system was discontinued on June 24, 1999.

- VOC concentrations have historically been modeled to assess air quality at the site boundary to compare associated hypothetical risks with and without treatment from the formerly-used PADRE air treatment system. Results for both the influent and effluent values indicate hypothetical risk levels to be generally below the cumulative risk action level of  $1 \times 10^{-6}$  (representing a risk of one in one million exposed) since the commencement of system operations. Included in Tables 13 and 14 are summaries of these air risk calculations. As noted, effluent air sampling conducted since discontinuation of air treatment on June 24, 1999 indicates the  $1 \times 10^{-6}$  action level has not been exceeded, with only one minor exception of February 2002. This was due to a slight increase in the vinyl chloride concentration noted in the system effluent air stream.

### **6.3 PROGRESS TOWARD REMEDIAL OBJECTIVES**

The primary objective of the continued on-going SVE system effluent monitoring is to ensure that the cumulative life-time cancer risk at the site boundary remains less than the cumulative risk action level of  $1 \times 10^{-6}$ . In order to meet this objective, air dispersion modeling was performed to determine the maximum concentrations at receptor locations outside the boundary of the WRR site. The Industrial Source Complex - Long-Term (ISC-LT) model was used for the purpose of modeling the dispersion of the influent and the effluent from the soil remediation system, based on the conservative assumption that the system was operating for 24 hours a day, 365 days a year.

The maximum concentrations determined by the air modeling study were multiplied by unit risk factors to estimate the excess carcinogenic risk posed by the hypothetical emissions through the inhalation route. The unit risk factors used in this study were developed from toxicity values included in U.S. EPA's Integrated Risk Information System (IRIS), U.S. EPA's "Health Assessment Summary Tables" (HEAST, Annual FY-1995), and information provided by the U.S. EPA Environmental Criteria Assessment Office (ECAO). The unit risk factors conservatively assume a chronic exposure to the

chemicals for 24 hours a day, 365 days a year, for a 70-year lifetime. A summary of air dispersion modeling and cumulative cancer risk estimates is provided in Appendix A. (In this report, references to cancer risk and cancer risk estimates refer to the estimated potential risks as indicated by the use of ISC-LT air dispersion modeling and are not meant to represent or suggest actual risks.)

Air dispersion modeling conducted on the air treatment system effluent data indicates that only one minor exceedence of the  $1 \times 10^{-6}$  action level occurred during this reporting period. In the past, slight exceedences of the  $1 \times 10^{-6}$  action level were modeled for in the March 1995, November 1995, July 1996, and September 1997 data for effluent samples. Exceedences were also noted in the March 1995, November 1995, May 1996, June 1996, July 1996, May 1997, April 1998, and February 1999 data for influent samples.

The air dispersion modeling conducted on the influent samples hypothetically assumed no treatment would be conducted on the air stream. The slight exceedence noted in the effluent concentrations for the months modeled has been intermittent and may be an anomaly. In any event, the slight exceedences are considered to represent a hypothetical risk as the calculations, for example, assume a continuous 70-year exposure to the concentrations measured in a given month.

Though active air treatment was discontinued on June 24, 1999, monthly effluent air sampling and risk assessment will continue to be conducted. Air treatment will be reactivated should the results from two consecutive monthly air samples indicate cumulative risks in excess of  $1 \times 10^{-6}$ .

Overall remediation system mass removal calculations indicate that, since inception of treatment system operations, approximately 12,545 lbs. of total VOCs have been removed by the SVE and groundwater treatment systems. Of this, approximately 89.2% (or 11,190 lbs.) is attributed to operation of the SVE and air sparge systems, and approximately 10.8% (or 1,355 lbs.) is attributed to the groundwater extraction system. Additionally,

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initial contaminant mass removal rates from the entire remediation system were approximately 88 lbs. of total VOCs per day during the startup phase of system operations. This removal rate has decreased to approximately 2.6 lbs. of total VOCs per day, as of June 2002. Figure 7 represents a summary of overall site VOC removal rates. Figure 8 represents a summary of total VOCs removed from the site. Table 19 provides the VOC removal rates for the SVE and air stripper systems, taking into account the air flow rates measured during the major spring and fall sampling events.

## **7.0 GROUNDWATER PRE-TREATMENT SYSTEM**

### **7.1 SYSTEM DESCRIPTION**

The groundwater pre-treatment system is designed to remove VOCs from extracted groundwater, prior to the effluent being discharged to the Columbia City POTW. Groundwater extracted from the site's ten groundwater recovery wells (RW1 through RW10) is initially pumped to an influent storage tank for solids settling and equalization. The untreated water is transferred from the influent storage tank through a bag filter to the top of an air stripping tower via electric transfer pumps. Water flows by gravity downward through the tower packing, while air flows upward through the tower, stripping the VOCs from the groundwater. The treated water drains from the tower into an effluent sump. Treated groundwater from the effluent sump is pumped via a dedicated forcemain to the Columbia City POTW.

### **7.2 MONITORING AND OPTIMIZATION TESTING RESULTS**

During the period of January 2002 through June 2002, the groundwater pretreatment system was operational for 97.8% of the time (i.e., % of total hours of available). The primary downtime occurrences were related to standard operation and maintenance activities and occasional power outages.

Monthly treatment system influent and effluent analytical results for groundwater entering and exiting the air stripping tower are summarized in Tables 15 and 16. The air stripping tower has consistently removed VOCs prior to discharge to the Columbia City POTW. Total VOC concentrations in the influent of the air stripping tower have fluctuated from 416 ug/L to 3,274 ug/L since commencement of treatment system operations. Influent groundwater VOC concentrations can vary over time, based on a variety of factors including recovery well cycling, rainfall events, and site water levels. The influent groundwater VOC concentrations during this reporting period began at 2,254 ug/L (January 2002) and ended at 1,800 ug/L (June 2002). The average total VOC concentration

for the influent during the reporting period was 1,817 ug/L. Average groundwater contaminant mass removal rates since the commencement of remediation system operations have ranged from approximately 0.8 lbs./day to 13.2 lb./day of total VOCs. The most recent system data, collected from June 2002, indicates that the groundwater contaminant mass removal rate is approximately 1.2 lbs. total VOCs per day, based on an average flow rate of 77,900 gpd and a total VOC concentration in the plant influent of 1,800 ug/L.

### **7.3 PROGRESS TOWARD REMEDIAL OBJECTIVES**

Results of the groundwater treatment system monthly effluent sampling conducted in accordance with the discharge agreement (i.e., the agreement in place prior to February 1, 1998) with the Columbia City POTW are included in Tables 17 and 18. Analytical results generally indicate very low levels of both organic and inorganic compounds to be present in the treated groundwater discharged to the Columbia City POTW. As of February 1, 1998, monthly groundwater treatment system sampling consists of influent and effluent sampling for VOCs only per the new agreement with the Columbia City POTW. Additional non-VOC parameters are sampled for during the annual sampling event conducted in October of each year. These results can be found in Table 18.

The treatment system sampling modifications were approved by the U.S. EPA and the Indiana Department of Environmental Management (IDEM) (Engineering Management, Inc., December 2, 1997).

## 8.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of operations to date, the remediation system is effectively removing VOCs from site soils and groundwater. To date, approximately 12,545 lbs. of total VOCs have been removed via the soil and groundwater remediation systems. Contaminant mass removal rates have decreased to approximately 1.2 lbs. total VOCs per day, versus a startup removal rate of approximately 88 lbs. of total VOCs per day. The following recommendations, unless otherwise indicated by the U.S. EPA, will be implemented to improve treatment system performance:

- Continue with the on-going standard operation and maintenance of the remediation system components to ensure maximum performance, consistent with remediation system objectives.
- Continue to conduct monthly groundwater treatment system influent and effluent sampling for VOCs per the discharge agreement with the Columbia City POTW.
- Continue with the on-going recovery well cleaning, pump repair and/or replacement, and groundwater recovery pipe cleaning, as needed to optimize groundwater recovery efficiency and maintain effective hydraulic control. Continue to assess the need to increase recovery pump sizes in select recovery wells.
- Continue cycling the SE area SVE system branch lines in order to maximize VOC removal and prevent the development of preferential vapor flowpaths. Continue system operation schedule, such that two of the SE area's six SVE system branch lines are operated simultaneously (two lines on, four lines off), with cycling of operation occurring approximately every week.
- Continue to sample the SVE effluent vapor stream to evaluate the potential cumulative excess cancer risks associated with the untreated vapor stream.

- Evaluate increasing the air sparging system's air flow rate while continuing to operate the system in a pulsed mode for optimum removal efficiency. Continue air sparging system operation cycling procedures such that two of the SE area's six air sparging system branch lines are operated at a time (two lines on, four lines off), in conjunction with the corresponding SVE lines. Cycle the operation approximately every week. Continue operation of the shallow air sparging wells only.

The cumulative excess cancer risks of the influent vapor stream will continue to be evaluated at the site boundary using the ISC-LT impacts model. Should the SVE effluent vapor stream continue to exhibit a cumulative excess cancer risk less than the  $1 \times 10^{-6}$  action level, the off-gas treatment system will remain off-line. Should two consecutive monthly SVE effluent vapor samples indicate a cumulative excess cancer risk of greater than  $1 \times 10^{-6}$ , the air treatment system will be restarted.

The following recommendations for the SVE System will be implemented, as agreed to during the July 11, 2002 Site Progress Meeting:

- Extend Branch Line G to the MW9S area.
- Suspend operation of Branch Line H.
- Eliminate the following monitoring activities:
  - Measurement of pressure and flow rate at individual SVE wells;
  - Measurement of pressure at various SVE monitoring points;
  - Semi-annual PID and colorimetric tube measurements in SVE branch lines;
  - Measurement of pressure and flow rate at individual air sparge wells; and,
  - Measurement of dissolved oxygen levels in various monitoring wells.

The following recommendations for the Groundwater System will be implemented, as agreed to during the July 11, 2002 Site Progress Meeting:

- Increase the extraction rate at RW3.
- Possible increase in extraction rate at RW5.

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- Add MW13S and MW83DS to the O&M monitoring program, with samples to be collected in October of each year.
- Add additional flow monitoring for selected recovery wells to enable better system flow tracking.

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## Tables



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**Table 1**  
**Summary of Vacuum Pressures and Flow Rates from the SVE Wells**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

SVE Well	Branch	Jan-96		Feb-96		Nov-96		Dec-96		Jan-97		Jul-97		Nov-97		Apr-98		Oct-98	
		Vacuum (in. H2O)	Flow (cfm)																
<b>SOUTHEAST AREA</b>																			
SVE 1	A	12	32	17	50	4	20-30	3	20-30	5.1	0	12	30-35	5	45-55	10	45-55	17	145-155
SVE 2	A	10	56	14	50	5	20-30	4	20-30	3.5	0	7	30-35	4	45-55	8	45-55	14	145-155
SVE 3	A	9	48	14	50	6	20-30	5	20-30	2.3	0	6	30-35	5	45-55	7	45-55	16	145-155
SVE 4	A	3	52	15	50	7	20-30	11	20-30	2.9	0	13	30-35	7	45-55	9	45-55	20	145-155
SVE 5	A	11	---	15	50	8	20-30	7	20-30	5.8	0	10	30-35	10	45-55	9	45-55	12	145-155
SVE 6	A	12	30	15	50	9	20-30	3	20-30	0.9	0	12	30-35	1	45-55	1	45-55	16	145-155
SVE 7	F	5	50	11	50	7	20-30	6	20-30	16	20-30	10	25-35	6	45-55	11	20-30	17	65-75
SVE 8	F	10	---	15	50	8	20-30	7	20-30	20	20-30	13	25-35	5	45-55	13	20-30	21	65-75
SVE 9	F	8	52	16	50	9	20-30	8	20-30	20.5	20-30	11	25-35	9	45-55	12	20-30	18	65-75
SVE 10	F	8	56	14	50	10	20-30	9	20-30	21	20-30	10	25-35	9	45-55	12	20-30	19	65-75
SVE 11	F	8	60	13	50	11	20-30	10	20-30	21	20-30	6	25-35	8	45-55	11	20-30	19	65-75
SVE 12	F	9	53	13	50	12	20-30	11	20-30	23	20-30	10	25-35	10	45-55	12	20-30	20	65-75
SVE 13	B	0	---	7	50	4	20-30	2	20-30	8.8	20-30	6	25-35	2	45-55	4	50-60	6	75-85
SVE 14	B	5	---	8	50	6	20-30	3	20-30	14.1	20-30	8	25-35	4	45-55	8	50-60	9	75-85
SVE 15	B	4	50	8	50	1	20-30	1	20-30	1.5	20-30	8	25-35	5	45-55	8	50-60	10	75-85
SVE 16	B	8	60	10	50	8	20-30	5	20-30	16.5	20-30	9	25-35	4	45-55	8	50-60	9	75-85
SVE 17	B	10	---	12	50	10	20-30	6	20-30	19.5	20-30	10	25-35	9	45-55	11	50-60	6	75-85
SVE 18	B	10	---	12	50	8	20-30	7	20-30	20	20-30	10	25-35	4	45-55	11	50-60	6	75-85
SVE 19	B	10	---	12	50	9	20-30	8	20-30	20.2	20-30	12	25-35	7	45-55	12	50-60	8	75-85
SVE 20	E	0	---	8	50	1	20-30	2	20-30	15.5	20-30	9	40-45	4	15-25	7	25-35	9	25-35
SVE 21	E	7	---	10	50	3	20-30	7	20-30	17	20-30	7	40-45	5	15-25	10	25-35	6	25-35
SVE 22	E	0	---	10	50	2	20-30	3	20-30	0	20-30	0	40-45	0	15-25	10	25-35	6	25-35
SVE 23	E	6	55	3	50	4	20-30	6	20-30	18	20-30	10	40-45	8	15-25	*	25-35	6	25-35
SVE 24	E	5	---	10	50	2	20-30	6	20-30	17.5	20-30	10	40-45	5	15-25	10	25-35	6	25-35
SVE 25	E	3	50	6	50	1	20-30	7	20-30	10.5	20-30	4	40-45	4	15-25	5	25-35	4	25-35
SVE 26	E	6	---	9	50	1	20-30	7	20-30	15	20-30	6	40-45	5	15-25	8	25-35	6	25-35
SVE 27	C	6	54	9	50	3	20-30	5	20-30	14.5	20-30	7	40-45	4	25-35	8	20-30	7	40-50
SVE 28	C	8	50	10	50	4	20-30	5	20-30	16	20-30	8	40-45	5	25-35	8	20-30	6	40-50
SVE 29	C	4	51	6	50	5	20-30	6	20-30	8.9	20-30	4	40-45	4	25-35	6	20-30	4	40-50
SVE 30	C	7	55	9	50	6	20-30	7	20-30	15.9	20-30	8	40-45	6	25-35	*	20-30	4	40-50
SVE 31	C	8	---	9	50	7	20-30	8	20-30	17	20-30	9	40-45	5	25-35	10	20-30	10	40-50
SVE 32	C	8	55	12	50	8	20-30	8	20-30	22.5	20-30	9	40-45	9	25-35	12	20-30	12	40-50
SVE 33	C	10	---	12	50	7	20-30	8	20-30	19.9	20-30	7	40-45	6	25-35	11	20-30	11	40-50
SVE 34	D	8	50	10	50	3	20-30	4	20-30	20	20-30	7	20-30	8	15-25	7	10-20	12	20-30
SVE 35	D	10	45	12	50	3	20-30	4	20-30	21	20-30	10	20-30	9	15-25	12	10-20	13	20-30
SVE 36	D	11	50	12	50	3	20-30	5	20-30	22.5	20-30	11	20-30	6	15-25	12	10-20	13	20-30
SVE 37	D	12	---	13	50	4	20-30	5	20-30	17.5	20-30	13	20-30	9	15-25	13	10-20	17	20-30
SVE 38	D	10	---	12	50	5	20-30	8	20-30	22	20-30	11	20-30	10	15-25	12	10-20	10	20-30
SVE 39	D	9	50	11	50	6	20-30	6	20-30	22	20-30	10	20-30	5	15-25	7	10-20	10	20-30
SVE 40S	D	12	55	13	50	7	20-30	7	20-30	23	20-30	12	20-30	6	15-25	13	10-20	15	20-30
SVE 40D	D	12	40	13	50	7	20-30	7	20-30	22	20-30	7	20-30	5	15-25	11	10-20	13	20-30
SVE 41	G	2	---	---	20-30	4	20-30	---	20-30	3.5	20-30	3	15-25	4	10-20	4	10-20	4	15-25
SVE 42	G	6	30	---	20-30	5	20-30	---	20-30	6.5	20-30	4	15-25	8	10-20	8	10-20	9	15-25
SVE 43	G	8	40	---	20-30	8	20-30	---	20-30	11	20-30	10	15-25	7	10-20	6	10-20	12	15-25
SVE 44	H	8	---	---	20-30	7	20-30	---	20-30	7.9	20-30	11	15-25	10	10-20	9	10-20	9	15-25
SVE 45	H	7	---	---	20-30	7	20-30	---	20-30	4	20-30	3	15-25	3	10-20	2	10-20	2	15-25
SVE 46	H	8	30	---	20-30	6	20-30	6	20-30	8	20-30	11	15-25	12	10-20	8	10-20	8	15-25
SVE 47	H	4	35	---	20-30	5	20-30	---	20-30	5.9	20-30	8	15-25	9	10-20	6	10-20	8	15-25
SVE 48	H	0	30	---	20-30	2	20-30	---	20-30	3.9	20-30	9	15-25	7	10-20	4	10-20	6	15-25
SVE 49	H	8	---	---	20-30	6	20-30	---	20-30	7	20-30	11	15-25	10	10-20	2	10-20	9	15-25
SVE 50	G	2	---	---	20-30	2	20-30	---	20-30	3.5	20-30	5	15-25	6	10-20	3	10-20	4	15-25
SVE 51	H	0	0	---	20-30	2	20-30	---	20-30	0	20-30	0	15-25	0	10-20	0	10-20	5	15-25
SVE 52	H	0	0	---	20-30	2	20-30	---	20-30	0	20-30	0	15-25	0	10-20	0	10-20	7	15-25
SVE 53	G	5	33	---	20-30	4	20-30	---	20-30	4.5	20-30	6	15-25	5	10-20	5	10-20	8	15-25
SVE 54	G	2	30	---	20-30	2	20-30	---	20-30	0	20-30	0	15-25	0	10-20	3	10-20	4	15-25
SVE 55	G	4	40	---	20-30	3	20-30	---	20-30	4.5	20-30	7	15-25	5	10-20	4	10-20	6	15-25

**Table 1**  
**Summary of Vacuum Pressures and Flow Rates from the SVE Wells**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

SVE Well	Branch	Apr-99		Oct-99		Apr-00		Oct-00		Apr-01		Oct-01		Apr-02	
		Vacuum (in.H2O)	Flow (cfm)												
<b>SOUTHEAST AREA</b>															
SVE 1	A	15	115-125	14	105-115	24	125-135	14	130-140	15	75-80	27	150-160	18	95-100
SVE 2	A	13	115-125	11	105-115	20	125-135	15	130-140	13	75-80	22	150-160	14	95-100
SVE 3	A	14	115-125	13	105-115	22	125-135	9	130-140	14	75-80	26	150-160	17	95-100
SVE 4	A	16	115-125	17	105-115	26	125-135	12	130-140	17	75-80	29	150-160	20	95-100
SVE 5	A	12	115-125	11	105-115	12	125-135	6.2	130-140	12	75-80	19	150-160	12	95-100
SVE 6	A	14	115-125	12	105-115	24	125-135	15	130-140	15	75-80	27	150-160	17	95-100
SVE 7	F	12	40-50	10	45-55	27	45-55	12	60-65	14	30-35	27	90-100	15	70-80
SVE 8	F	15	40-50	15	45-55	31	45-55	14	60-65	17	30-35	32	90-100	12	70-80
SVE 9	F	16	40-50	14	45-55	31	45-55	13	60-65	16	30-35	32	90-100	18	70-80
SVE 10	F	15	40-50	14	45-55	30	45-55	14	60-65	16	30-35	34	90-100	18	70-80
SVE 11	F	14	40-50	11	45-55	20	45-55	8	60-65	14	30-35	30	90-100	18	70-80
SVE 12	F	15	40-50	16	45-55	32	45-55	5	60-65	16	30-35	35	90-100	19	70-80
SVE 13	B	7	75-85	5	75-85	9	95-105	5	85-90	7	50-55	7	80-90	9	75-80
SVE 14	B	14	75-85	8	75-85	9	95-105	9	85-90	8	50-55	10	80-90	11	75-80
SVE 15	B	15	75-85	7	75-85	10	95-105	8.6	85-90	10	50-55	11	80-90	10	75-80
SVE 16	B	14	75-85	9	75-85	10	95-105	9.4	85-90	10	50-55	12	80-90	12	75-80
SVE 17	B	12	75-85	14	75-85	10	95-105	7	85-90	10	50-55	14	80-90	14	75-80
SVE 18	B	18	75-85	13	75-85	17	95-105	12	85-90	12	50-55	16	80-90	15	75-80
SVE 19	B	22	75-85	15	75-85	20	95-105	16	85-90	14	50-55	18	80-90	19	75-80
SVE 20	E	20	60-70	12	60-70	13	65-75	13	75-85	8	30-35	10	50-60	16	65-75
SVE 21	E	19	60-70	12	60-70	13	65-75	12	75-85	10	30-35	12	50-60	17	65-75
SVE 22	E	22	60-70	14	60-70	14	65-75	13	75-85	10	30-35	12	50-60	18	65-75
SVE 23	E	21	60-70	15	60-70	14	65-75	13	75-85	10	30-35	12	50-60	18	65-75
SVE 24	E	22	60-70	14	60-70	14	65-75	14	75-85	10	30-35	13	50-60	19	65-75
SVE 25	E	8	60-70	5	60-70	6	65-75	4.6	75-85	5	30-35	4	50-60	6	65-75
SVE 26	E	12	60-70	12	60-70	8	65-75	12	75-85	8	30-35	10	50-60	16	65-75
SVE 27	C	15	55-65	10	55-65	12	75-85	11	55-65	9	30-35	10	30-35	17	50-60
SVE 28	C	18	55-65	12	55-65	13	75-85	13	55-65	10	30-35	10	30-35	18	50-60
SVE 29	C	12	55-65	8	55-65	9	75-85	8	55-65	7	30-35	9	30-35	12	50-60
SVE 30	C	21	55-65	12	55-65	12	75-85	11	55-65	7	30-35	7	30-35	15	50-60
SVE 31	C	24	55-65	14	55-65	16	75-85	16	55-65	10	30-35	9	30-35	21	50-60
SVE 32	C	28	55-65	22	55-65	16	75-85	18	55-65	15	30-35	12	30-35	27	50-60
SVE 33	C	17	55-65	18	55-65	10	75-85	19	55-65	12	30-35	10	30-35	22	50-60
SVE 34	D	19	30-40	20	20-30	30	50-60	17	20-25	14	10-20	10	25-35	22	15-20
SVE 35	D	20	30-40	20	20-30	26	50-60	19	20-25	16	10-20	14	25-35	27	15-20
SVE 36	D	20	30-40	21	20-30	27	50-60	19	20-25	15	10-20	14	25-35	24	15-20
SVE 37	D	23	30-40	22	20-30	38	50-60	19	20-25	20	10-20	16	25-35	29	15-20
SVE 38	D	30	30-40	18	20-30	32	50-60	18	20-25	13	10-20	12	25-35	22	15-20
SVE 39	D	20	30-40	16	20-30	24	50-60	13	20-25	15	10-20	12	25-35	26	15-20
SVE 40S	D	22	30-40	22	20-30	43	50-60	19	20-25	15	10-20	14	25-35	28	15-20
SVE 40D	D	20	30-40	22	20-30	44	50-60	20	20-25	15	10-20	14	25-35	26	15-20
<b>AST AREA</b>															
SVE 41	G	6	10-20	3	20-30	3	20-30	2	20-30	13	10-20	13	10-20	8	10-20
SVE 42	G	10	10-20	8	20-30	3	20-30	4.4	20-30	>10	10-20	8	10-20	8	10-20
SVE 43	G	14	10-20	16	20-30	8	20-30	8	20-30	>10	10-20	12	10-20	13	10-20
SVE 44	H	11	10-20	13	20-30	4	20-30	8.6	20-30	---	---	21	10-20	10	10-20
SVE 45	H	2	10-20	14	20-30	5	20-30	8.6	20-30	---	---	28	10-20	16	10-20
SVE 46	H	11	10-20	13	20-30	2	20-30	8.6	20-30	---	---	21	10-20	12	10-20
SVE 47	H	7	10-20	11	20-30	8	20-30	6	20-30	---	---	20	10-20	9	10-20
SVE 48	H	5	10-20	8	20-30	11	20-30	6	20-30	---	---	22	10-20	10	10-20
SVE 49	H	12	10-20	12	20-30	13	20-30	8.4	20-30	---	---	20	10-20	10	10-20
SVE 50	G	4	10-20	4	20-30	12	20-30	2	20-30	11	10-20	10	10-20	7	10-20
SVE 51	H	12	10-20	10	20-30	9	20-30	9	20-30	---	---	34	10-20	15	10-20
SVE 52	H	10	10-20	11	20-30	6	20-30	8	20-30	---	---	32	10-20	18	10-20
SVE 53	G	8	10-20	8	20-30	8	20-30	4.2	20-30	>10	10-20	7	10-20	10	10-20
SVE 54	G	4	10-20	5	20-30	10	20-30	2.8	20-30	11	10-20	9	10-20	8	10-20
SVE 55	G	8	10-20	7	20-30	11	20-30	3.4	20-30	17	10-20	16	10-20	9	10-20

**Table 1**  
**Summary of Vacuum Pressures and Flow Rates from the SVE Wells**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

- Notes:**
1. Vacuum measurements are reported in inches of water (in. H<sub>2</sub>O).
  2. Flow measurement reported in cubic feet per minute (cfm). All flow measurements are approximate.
  3. --- = No value recorded.
  4. Flow measurements for soil vapor extraction (SVE) wells 41-55 taken in February 1996 are estimated based off branch line measurements.
  5. Vacuum measurements for November 1996, SVE wells 1-12 and 27-40D, are estimated based on branch line measurements; the rest are based on direct readings.
  6. Vacuum measurements for December 1996 estimated based on branch line measurements, except for SVE wells 4, 6, 15, 21, 22, 23, 27, 38, and 46, which are based on direct readings.
  7. January 1997 values taken with SVE Branch A closed. Aboveground Storage Tank (AST) area flow at approximately 100 cfm, and Southeast (SE) flow at approximately 1,100 cfm.
  8. July 1997 values taken with Branch line A throttled back to approximately 200 standard cfm (scfm) with rest of the branch line wide open. Total flowrate approximately 1,400 scfm.
  9. November 1997 values taken with all SE branch lines wide open. Total flowrate approximately 1,460 scfm from SE area. AST area flow approximately 200 scfm.
  10. April 1998 values taken with all SE branch lines wide open. Total flowrate approximately 1,340 scfm from SE area. AST area flow approximately 200 scfm.
  11. \* = Broken vacuum gauge.
  12. October 1998 flow readings collected with three lines operative and remaining three off. Initial readings collected from lines A, D, and F. Then lines A, D, and F were turned off; and lines B, E, and C were turned on. Approximate total flow from SE and AST areas is 1,295 cfm and 305 cfm, respectively.
  13. April 1999 flow readings collected with three lines operative and remaining three off. Initial readings collected from lines A, D, and F. Then lines A, D, and F were turned off; and lines B, E, and C were turned on. Approximate total flow from SE and AST areas is 2,730 cfm and 210 cfm, respectively.
  14. October 1999 flow readings collected with three lines operative and remaining three off. Initial readings collected from lines A, B, and F. Then lines A, B, and F were turned off; and lines D, E, and C were turned on. Approximate total flow from SE and AST areas is 2,590 cfm and 400 cfm (December 1999), respectively.
  15. April 2000 flow readings collected with three lines operative and remaining three off. Initial readings collected from lines B, E, and C; then from lines A, D, and F. Approximate total flow from SE and AST areas is 1,500 cfm and 400 cfm, respectively, during the time measurements were collected. Note: SVE flows constantly change due to cycling of the air stripper.
  16. October 2000 flow readings collected with three lines operative and the remaining three off. Initial readings were collected from lines E, C, and D (1,200 cfm total); then from lines A, F, and B (1,800 cfm total). AST area flow fluctuates based on air stripper performance and which SE area branch lines open. Estimate at approximately 400 cfm.
  17. April 2001 flow readings collected with all six lines (A-F) operative (1,600 cfm total) and the groundwater extraction system off. Approximate total flow from AST area is 224 cfm.
  18. April 2001 readings for Branch H were not collected due to accumulated water in the extraction lines.
  19. October 2001 readings collected with two SE area branch lines operating at any one time. Branches are paired (A+F), (B+E), and (C+D), respectively. All deep air sparging wells turned off September 17, 2001.
  20. April 2002 flow readings collected with three lines operative and the remaining three off. Initial readings were collected from lines A, F, and B (1,570 cfm total); then from lines E, C, and D (1,030 cfm total).

**Table 2**  
**Summary of Vacuums Measured at the SVE Monitoring Points**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

Monitoring Point	Location	Vacuum - 1/9/1996	Vacuum - 2/15/1996	Vacuum - 2/16/1996	Vacuum - 2/18/1996	Vacuum - 12/10/1996	Vacuum - 7/24/1997	Vacuum - 11/18/1997	Vacuum - 4/21/1998	Vacuum - 10/14/1998	Vacuum - 4/13/1999	Vacuum - 12/9/1999	Vacuum - 4/18/2000	Vacuum - 10/2/2000	Vacuum - 4/19/2001	Vacuum - 10/1/2001	Vacuum - 4/25/2002
PP1 S/D	SE	0.80/0.50	4.30/2.80	2.40/2.60	3.90/3.30	0.95/0.65	0.40/0.20	0.65/0.00	1.10/0.00	0.40/0.20	1.75/0.80	0.60/0.25	1.30/0.55	0.70/0.15	1.20/0.30	1.10/0.10	1.45/0.46
PP2 S/D	SE	0.15/0.30	1.80/2.40	1.60/2.20	---	0.10/0.30	0.00/0.00	0.00/0.00	0.00/0.00	0.20/0.45	0.05/0.10	0.16/0.51	0.10/0.15	0.00/0.10	0.00/0.00	0.07/0.19	
PP3 S/D	SE	0.00/0.40	0.70/3.40	0.50/2.60	---	0.01/0.45	0.00/0.15	0.01/0.01	0.05/0.15	0.20	0.35/0.85	0.00/0.25	0.14/0.45	0.10/0.40	0.10/0.30	0.00/0.00	0.16/0.64
PP6 S/D	AST	---	---	---	---	---	0.30/0.00	0.35/0.00	0.00/0.00	0.00/0.30	0.00/0.45	0.00/0.00	0.00/0.10	0.10/0.35	0.00/0.00	0.00/0.00	0.00/0.00
PP8 S/D	SE	2.20/2.90	7.30/7.80	8.60/9.20	---	1.30/1.90	0.50/1.20	0.25/0.75	0.45/0.65	0.40/0.60	0.50/1.80	0.25/0.50	0.00/0.00	0.25/0.90	0.10/0.80	0.40/1.00	0.10/0.50
PP9 S/D	SE	2.50/2.60	8.00/8.00	8.70/9.00	---	1.70/1.75	0.35/0.60	0.40/0.60	0.75/0.85	0.40/0.60	1.20/1.55	0.20/0.75	0.17/0.22	0.35/0.90	0.20/0.80	0.50/1.30	0.20/0.50
PP10 S/D	SE	1.50/1.50	5.30/5.50	5.80/6.00	---	0.85/1.00	0.25/0.60	0.20/0.20	0.70/0.85	0.15/0.25	0.85/1.15	0.10/0.25	0.91/0.52	0.10/0.35	0.10/0.40	0.10/0.30	0.10/0.25
PP11 S/D	SE	0.00/1.50	0.25/4.80	2.80/5.40	---	1.05/0.00	0.00/0.35	0.00/0.65	0.00/0.20	0.00/0.60	0.00/1.15	0.00/0.25	0.03/0.60	0.00/0.50	0.00/0.40	0.00/0.30	0.05/0.42
PP12 S/D	SE	0.80/1.30	5.00/5.00	5.00/5.20	---	1.20/1.70	0.75/1.00	0.25/0.35	1.00/0.00	0.15/0.60	1.00/1.25	0.15/0.25	0.71/0.90	0.30/0.50	0.70/1.20	0.50/0.80	0.40/0.59
PP13 S/D	SE	1.60/1.60	4.00/4.60	3.60/4.00	---	1.65/1.80	0.60/0.70	0.40/0.45	1.40/1.45	0.30/0.45	1.30/1.55	0.25/0.35	0.86/1.03	0.40/0.45	0.80/1.00	0.90/0.90	0.40/0.55
PP14 S/D	SE	0.20/0.20	3.10/3.20	2.90/2.90	2.50/2.70	0.15/0.15	0.00/0.00	0.00/0.00	0.15/0.00	0.10/0.15	0.55/0.70	0.05/0.15	0.42/0.66	0.15/0.20	0.05/0.10	0.20/0.20	0.21/0.33
PP15 S/D	SE	0.80/0.00	4.90/0.00	4.80/0.00	4.30/0.00	0.30/0.00	0.25/0.00	0.15/0.00	0.15/0.00	0.05/0.00	0.30/0.00	0.05/0.00	0.15/0.00	0.15/0.00	0.10/0.00	0.50/0.00	0.26/0.50
PP16 S/D	SE	0.00/0.00	2.80/0.00	2.50/0.00	1.80/0.00	0.01/0.00	0.00/0.00	0.00/0.00	0.00/0.00	0.00/0.00	0.05/0.00	0.00/0.00	0.09/0.02	0.00/0.00	0.00/0.00	0.00/0.00	0.00/0.00
PP17 S/D	SE	0.60/0.80	3.70/0.40	3.20/0.10	2.60/0.60	0.55/0.00	0.50/0.00	0.40/0.45	0.35/0.00	0.10/0.10	0.40/0.00	0.15/0.15	0.26/0.04	0.00/0.00	0.00/0.00	0.00/0.00	0.01/0.00
PP18 S/D	SE	1.50/2.20	4.00/5.50	3.70/4.90	2.90/4.50	1.55/1.90	0.00/0.65	0.70/0.85	1.20/1.30	0.60/0.95	1.70/1.95	0.55/1.0	1.16/1.42	0.30/0.40	0.40/0.45	0.50/0.10	0.54/0.62
PP19 S/D	SE	1.10/0.00	4.10/0.00	4.20/0.00	3.40/0.00	0.85/0.00	0.45/0.00	0.50/0.00	0.35/0.00	0.20/0.00	0.20/0.00	0.50/0.00	0.09/0.00	0.10/0.30	0.00/0.00	0.50/0.40	0.08/0.30
PP20 S/D	AST	---	---	---	---	---	0.00/0.00	0.00/0.00	0.00/0.00	0.00/0.00	0.00/0.00	0.00/0.00	0.00/0.00	0.00/0.00	0.00/0.00	0.00/0.00	
PP21 S/D	AST	---	---	---	---	---	0.00/0.00	0.00/0.00	0.00/0.00	0.00/0.00	0.00/0.00	0.00/0.25	0.00/0.01	0.00/0.00	0.00/0.00	0.00/0.50	0.00/1.25
PP22 S/D	AST	---	---	---	---	---	0.15/0.00	0.05/0.00	0.00/0.00	0.00/0.00	0.00/0.00	0.00/0.125	0.20/0.30	0.00/0.15	0.00/0.30	0.00/0.30	0.00/0.14
MW2S	SE	1.00	5.50	6.30	---	0.85	0.40	0.15	0.35	0.10	0.60	0.15	0.25	0.15	0.10/0.00	0.10	0.15
MW3S	SE	---	5.50	---	4.40	0.01	1.40	1.50	1.50	0.45	2.40	0.50	0.95	0.00	0.60/0.00	0.60	0.75
MW10S	SE	0.50	4.30	4.00	---	0.75	0.25	0.15	0.50	0.40	0.70	0.05	0.89	0.00	0.40/0.00	0.30	0.20
MW11S	SE	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00/0.00	0.00	0.00

- Notes:
1. Vacuums reported in inches of water.
  2. S/D = Shallow/deep.
  3. --- = No data available.
  4. December 1996 measurements taken with all soil vapor extraction (SVE) lines open. Southeast (SE) area flow approximately 1,200 cubic feet per minute (cfm). Aboveground Storage Tank (AST) area flow approximately 400 cfm.
  5. July 1997 values taken with SE area flow at approximately 1,100 standard cfm (scfm) and AST area at approximately 300 scfm.
  6. November 1997 values taken with all SE branch lines wide open. SE flowrate approximately 1,460 scfm. AST flowrate approximately 200 scfm.
  7. April 1999 measurements were taken with Branch lines A, F, and B open and operating and again with Branch lines C, D, and E open and operating. The highest value collected was reported.
  8. December 1999 measurements were taken with Branch lines A, F, and B open and operating and again with Branch lines C, D, and E open and operating. The highest value collected was reported.
  9. April 2000 measurements were taken with Branch lines A, D, and F open and operating and again with Branch lines B, C, and E open and operating. The highest value collected was reported.
  10. October 2000 measurements were taken on October 2, 2000 with Branch lines E, C, and D open and operating, and on October 6, 2000 with Branch lines A, F, and B open and operating. The highest value collected was reported.
  11. April 2001 measurements were collected with all six branch lines open and operating. SE flowrate approximately 1,600 scfm. AST flowrate approximately 224 scfm.
  12. April 2002 measurements were taken with Branch lines A, F, and B open and operating and again with Branch lines C, D, and E open and operating. The highest value collected was reported.

**Table 3**  
**Summary of Branch Line VOC Measurements**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

	Feb-96			Nov-96				Dec-96				Sep-97				Nov-97				
	PID	TCE	DCE	PID	TCE	DCE	VC													
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	
<b>SOUTHEAST AREA</b>																				
<b>SVE Wells</b>																				
Branch A	1 - 6	27	2	6	0	---	---	---	0	0	0	0	0.6	2.2	<5	2.7	8.6	2	6	6
Branch F	7 - 12	22	1.9	2.4	17	4	8	---	15	4	12	9	0.8	<1	<5	0.8	19	7	12	14
Branch B	13 - 19	10	1	4	2	---	---	---	8	3	8	6	0.4	<1	<5	0.8	10	5	1	5
Branch E	20 - 26	4	4	6	10	2	5	---	8	4	10	4	0.4	0.8	<5	0.8	6.9	2	1	3
Branch C	27 - 33	13	3	8	1	---	---	---	11	4	8	7	0.4	1	<5	0.4	10	5	10	10
Branch D	34 - 40D	15	3	8	16	3	7	---	10	4	10	10	7.3	6.5	12	5.5	11	5	8	8
Branch A-F	1 - 40D	31	5	7	19	12	15	10	15	13	15	10	6.9	---	---	---	8	---	---	---
<b>AST AREA</b>																				
Branch G (east)	41-43, 50, 53-55	17	2	6	0.3	<1	<5	<0.2	---	---	---	---	3.9	---	---	---	<1	---	---	---
Branch H (west)	44-49, 51-52	0	---	---	2.1	<1	<5	2	---	---	---	---	1.1	---	---	---	<1	---	---	---

**Notes:**

1. PID = Photoionization detector. TCE = Trichloroethene. DCE = Dichloroethene. VC = Vinyl chloride.
2. TCE, DCE, and VC measurements reported in parts per million (ppm) via colorimetric tubes.
3. SVE = Soil vapor extraction. AST = Aboveground Storage Tank.
4. --- = No reading was recorded via colorimetric tubes (see laboratory Summa canister sampling results).
5. Effective April 1998, DCE colorimetric tubes were unavailable.
6. PID readings for Branches A-F in April 1999 were collected with Branches A, B, and F operating and then with Branches C, D, and E operating.  
The collected values were then averaged.
7. April and October 2000 PID readings for the Southeast area were completed while air sparging was off.

**Table 3**  
**Summary of Branch Line VOC Measurements**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

	Apr-98			Oct-98			Apr-99			Oct-99			Apr-00			Oct-00			
	PID (ppm)	TCE (ppm)	VC (ppm)	PID (ppm)	TCE (ppm)	VC (ppm)	PID (ppm)	TCE (ppm)	VC (ppm)	PID (ppm)	TCE (ppm)	VC (ppm)	PID (ppm)	TCE (ppm)	VC (ppm)	PID (ppm)	TCE (ppm)	VC (ppm)	
<b>SOUTHEAST AREA</b>																			
<b>SVE Wells</b>																			
Branch A	1 - 6	1.9	<2	2.7	12	2	8	2.8	<1	2.5	3.9	3	3.5	2	<1	1.2	4.3	4	3.5
Branch F	7 - 12	2.5	2	3.8	14	12	15	6.4	1.8	4.4	9.4	7	5.2	7.6	1.3	3.6	5.6	6	4.2
Branch B	13 - 19	0.7	<2	1.2	8.4	4	7	3.2	<1	1.7	3.1	3	1.8	3.4	0.6	1	3	4	1.9
Branch E	20 - 26	1.7	<2	1.4	9.6	5	8	0.7	1.2	1.9	5.2	5	3.2	1	0.8	0.7	2.6	4	1.5
Branch C	27 - 33	2.3	<2	1.2	11	4	9	2.8	<1	2.2	6.2	4	3.9	2.6	1	0.7	3.6	5	4
Branch D	34 - 40D	10.3	5	8.8	9.8	5	7	0.5	<1	1.5	3.8	4	3.0	0.4	0.8	0.7	2.8	4	3.4
Branch A-F	1 - 40D	1.6	---	---	12.1	---	---	2.25	---	---	---	---	---	---	---	---	---	---	---
<b>AST AREA</b>																			
Branch G (east)	41-43, 50, 53-55	0.4	---	---	8.2	---	---	1.5	---	---	---	---	---	2.2	1.2	1	---	---	---
Branch H (west)	44-49, 51-52	0.3	---	---	2.3	---	---	1.5	---	---	---	---	---	0.4	<0.5	0.3	---	---	---

**Notes:**

1. PID = Photoionization detector. TCE = Trichloroethene. DCE = Dichloroethene. VC = Vinyl chloride.
2. TCE, DCE, and VC measurements reported in parts per million (ppm) via colorimetric tubes.
3. SVE = Soil vapor extraction. AST = Aboveground Storage Tank.
4. --- = No reading was recorded via colorimetric tubes (see laboratory Summa canister sampling results).
5. Effective April 1998, DCE colorimetric tubes were unavailable.
6. PID readings for Branches A-F in April 1999 were collected with Branches A, B, and F operating and then with Branches C, D, and E operating.  
The collected values were then averaged.
7. April and October 2000 PID readings for the Southeast area were completed while air sparging was off.

**Table 3**  
**Summary of Branch Line VOC Measurements**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

	Apr-01			Nov-01			Apr-02			
	PID (ppm)	TCE (ppm)	VC (ppm)	PID (ppm)	TCE (ppm)	VC (ppm)	PID (ppm)	TCE (ppm)	VC (ppm)	
<b>SOUTHEAST AREA</b>										
<b>SVE Wells</b>										
Branch A	1 - 6	<1	0.50	0.70	1.2	<0.2	1.2	0.5	1.7	1.5
Branch F	7 - 12	<1	1.00	0.80	3	<0.2	1.2	1.6	1.7	1.8
Branch B	13 - 19	<1	1.00	0.60	0.5	0.8	1.1	1.4	3.3	1.3
Branch E	20 - 26	<1	1.00	1.00	0.5	0.8	1.4	0.4	1.7	1.8
Branch C	27 - 33	<1	1.00	1.10	1.5	1	1.5	0.9	1.7	1.1
Branch D	34 - 40D	<1	0.63	0.60	1.6	0.8	2.1	2.2	1.7	1.8
Branch A-F	1 - 40D	---	---	---	---	---	---	---	---	---
<b>AST AREA</b>										
Branch G (east)	41-43, 50, 53-55	---	---	---	---	---	---	---	---	---
Branch H (west)	44-49, 51-52	---	---	---	---	---	---	---	---	---

**Notes:**

1. PID = Photoionization detector. TCE = Trichloroethene. DCE = Dichloroethene. VC = Vinyl chloride.
2. TCE, DCE, and VC measurements reported in parts per million (ppm) via colorimetric tubes.
3. SVE = Soil vapor extraction. AST = Aboveground Storage Tank.
4. --- = No reading was recorded via colorimetric tubes (see laboratory Summa canister sampling results).
5. Effective April 1998, DCE colorimetric tubes were unavailable.
6. PID readings for Branches A-F in April 1999 were collected with Branches A, B, and F operating and then with Branches C, D, and E operating. The collected values were then averaged.
7. April and October 2000 PID readings for the Southeast area were completed while air sparging was off.

**Table 4**  
**Summary of Pressure Flow Measurements at the Air Sparging Wells, April 2002**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

SHALLOW WELL			
<b>Branch</b>		<b>Pressure (psi)</b>	<b>Flow (cfm)</b>
A	AS1	5.0	1.0 - 3.0*
A	AS2	9.0	1.0 - 3.0*
A	AS3	5.0	1.0 - 3.0*
A	AS4	4.0	1.0 - 3.0*
A	AS5	4.0	1.0 - 3.0*
A	AS6	7.0	1.0 - 3.0*
F	AS7	7.0	1.0 - 3.0*
F	AS8	5.0	1.0 - 3.0*
F	AS9	4.0	1.0 - 3.0*
F	AS10	6.0	1.0 - 3.0*
F	AS11	6.0	1.0 - 3.0*
F	AS12	5.0	1.0 - 3.0*
B	AS13	10.0	1.0 - 3.0*
B	AS14	4.0	1.0 - 3.0*
B	AS15	4.0	1.0 - 3.0*
B	AS16	6.0	1.0 - 3.0*
B	AS17	4.0	1.0 - 3.0*
B	AS18	4.0	1.0 - 3.0*
B	AS19	6.0	1.0 - 3.0*
E	AS20	>15	1.0 - 3.0*
E	AS21	4.5	1.0 - 3.0*
E	AS22	7.0	1.0 - 3.0*
E	AS23	5.5	1.5
E	AS24	6.5	1.0 - 3.0*
E	AS25	5.0	1.0 - 3.0*
E	AS26	4.5	1.0 - 3.0*
C	AS27	7.5	1.0 - 3.0*
C	AS28	9.5	1.0 - 3.0*
C	AS29	4.5	1.0 - 3.0*
C	AS30	6.5	1.0 - 3.0*
C	AS31	6.0	1.0 - 3.0*
C	AS32	5.0	1.0 - 3.0*
C	AS33	5.0	1.0 - 3.0*
D	AS34	7.0	1.0 - 3.0*
D	AS35	7.5	3.5
D	AS36	6.0	2.0
D	AS37	5.5	1.0 - 3.0*
D	AS38	10.5	1.0 - 3.0*
D	AS39	7.0	1.0 - 3.0*
D	AS40	8.5	1.0 - 3.0*

- Notes:**
1. Pressures reported in pounds per square inch (psi).
  2. Air flowrates reported in cubic feet per minute (cfm).
  3. Air flowrates manually adjusted at well head as indicated with resulting injection pressures recorded.
  4. Pressure and flow values were recorded on April 22, 2002 for all branches.
  5. Deep wells were turned off September 17, 2001.
  6. \* = Air flow estimated due to poor visibility through flow meter.

**Table 5**  
**Summary of Southeast Area Dissolved Oxygen Measurements**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

<u>Monitoring Point</u>	<u>Jan-96</u> D.O. (mg/L)	<u>Feb-96</u> D.O. (mg/L)	<u>Dec-96</u> D.O. (mg/L)	<u>Jun-97</u> D.O. (mg/L)	<u>Sep-97</u> D.O. (mg/L)	<u>Nov-97</u> D.O. (mg/L)	<u>May-98</u> D.O. (mg/L)	<u>Oct-98</u> D.O. (mg/L)	<u>Apr-99</u> D.O. (mg/L)	<u>Jun-99</u> D.O. (mg/L)	<u>Oct-99</u> D.O. (mg/L)
MW2S	1.30	3.40	1.65	1.30	1.36	1.70	0.90	5.50	10.00	10.00	12.00
MW3S	---	6.00	3.64	1.60	0.60	2.00	0.90	3.00	8.00	8.00	1.00
MW10S	0.80	2.60	1.40	0.80	0.60	3.10	1.70	3.50	12.00	12.00	12.00
MW11S	2.80	9.80	1.69	1.55	9.18	10.60	6.60	6.00	3.00	3.00	<1
MW83AS	0.80	3.80	1.35	2.22	1.07	3.20	0.60	4.50	2.00	2.00	<1
RW5	---	---	1.27	1.22	1.55	1.10	2.00	1.00	2.00	---	<1
RW6	---	---	1.27	0.64	1.12	1.20	2.00	6.00	3.00	---	2.00
RW7	---	---	4.06	0.76	3.12	1.10	4.00	8.00	8.00	---	2.00
RW8	---	---	2.27	1.52	2.47	4.00	1.00	6.00	5.00	---	1.00
RW9	---	---	1.33	1.25	6.96	1.50	8.00	5.00	8.00	---	1.00
RW10	---	---	1.07	0.73	2.77	7.60	4.00	1.00	3.00	---	2.00
<u>Monitoring Point</u>	<u>Apr-00</u> D.O. (mg/L)	<u>Oct-00</u> D.O. (mg/L)	<u>Apr-01</u> D.O. (mg/L)	<u>Oct-01</u> D.O. (mg/L)	<u>Apr-02</u> D.O. (mg/L)						
MW2S	8.00	0.87	8.00	4.00	1.00						
MW3S	8.00	1.91	1.00	<1	1.00						
MW10S	10.00	2.15	2.00	1.00	2.00						
MW11S	2.00	7.41	<1	2.00	3.00						
MW83AS	2.00	1.01	<1	<1	<1						
RW5	1.00	1.96	1.00	1.00	2.00						
RW6	4.00	0.96	3.00	2.00	3.00						
RW7	9.00	5.14	3.00	2.00	2.00						
RW8	4.00	1.85	<1	2.00	8.00						
RW9	7.00	3.35	4.00	3.00	5.00						
RW10	2.00	1.01	1.00	1.00	3.00						

- Notes:**
1. Dissolved oxygen (D.O.) levels reported in milligrams per liter (mg/L).
  2. --- = No reading was recorded.
  3. All monitoring points listed above are located inside the slurry wall where sparging occurs, except RW5.

**Table 6**  
**Summary of Summa Canister Sampling for SVE Lines**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

<b>Contaminant</b>	SE Area Branches A-F (AS-ON) 9-Jan-96	SE Area Branches A-F (AS-ON) 15-Feb-96	SE Area Branches A-F (AS-ON) 16-Feb-96	SE Area Branches A-F (AS-ON) 18-Feb-96	SE Area Branches A-F (AS-ON) 25-Nov-96	SE Area Branches A-F (AS-OFF) 27-Nov-96	SE Area Branches A-F (AS-ON) 1-Sep-97	SE Area Branches A-F (AS-OFF) 5-Sep-97
Tetrachloroethene	670	470	470	470	450	370	370	370
Trichloroethene	9100	8600	7200	7100	4000	3000	2,800	2,800
cis 1,2-Dichloroethene	9600	6800	6600	6400	5300	3700	2,900	3,000
trans 1,2-Dichloroethene	850	460	540	480	490	340	370	380
Vinyl Chloride	<84	<72	240	230	61	<34	130	200
1,1,1-Trichloroethane	1300	810	770	700	520	340	280	290
1,1-Dichloroethane	230	230	300	180	120	81	88	82
Xylenes (total)	<84	<72	<72	<72	<36	<34	<17	<34
4-Ethyltoluene	<84	<72	<72	<72	<36	<34	<17	<34
1,3,5-Trimethylbenzene	<84	<72	<72	<72	<36	<34	<17	<34
1,2,4-Trimethylbenzene	<84	<72	<72	<72	<36	<34	<17	<34
SVE Well Groups	1 - 40D	1 - 40D	1 - 40D	1 - 40D	1 - 40D	1 - 40D	1 - 40D	1 - 40D

**Notes:**

1. All results reported in parts per billion (volume/volume basis).
2. AST = Aboveground Storage Tank.
3. SE = Southeast.
4. AS = Air sparging (on or off).
5. Branch G = East branch.
6. Branch H = West branch.
7. NA = Parameter not analyzed.
8. SVE = Soil vapor Extraction.

**Table 6**  
**Summary of Summa Canister Sampling for SVE Lines**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

<u>Contaminant</u>	SE Area Branches A-F (AS-ON) <u>18-Nov-97</u>	SE Area Branches A-F (AS-OFF) <u>21-Nov-97</u>	SE Area Branches A-F (AS-ON) <u>21-Apr-98</u>	SE Area Branches A-F (AS-OFF) <u>28-Apr-98</u>	SE Area Branches A-F (AS-ON) <u>14-Oct-98</u>	SE Area Branches A-F (AS-OFF) <u>16-Oct-98</u>	SE Area Branches A-F (AS-ON) <u>26-Apr-99</u>	SE Area Branches A-F (AS-OFF) <u>13-Apr-99</u>	SE Area Branches A-F (AS-ON) <u>14-Dec-99</u>	SE Area Branches A-F (AS-OFF) <u>21-Dec-99</u>
Tetrachloroethene	240	220	56	100	450	270	53	5	54	58
Trichloroethene	3,800	3,500	330	540	2,500	2,900	250	94	650	540
cis 1,2-Dichloroethene	4,400	4,300	830	1,000	3,300	3,500	410	210	1,500	1,300
trans 1,2-Dichloroethene	460	460	71	74	280	360	40	22	180	160
Vinyl Chloride	89	56	85	<12	<25	<25	12	15	180	29
1,1,1-Trichloroethane	270	290	47	51	280	190	90	6	100	87
1,1-Dichloroethane	98	92	20	19	70	73	14	5	47	38
Xylenes (total)	<36	<30	23	14	<25	<25	29	5	<9.7	<7.8
4-Ethyltoluene	<36	<30	<12	<12	<25	<25	7	<2	<9.7	<7.8
1,3,5-Trimethylbenzene	<36	<30	<12	<12	<25	<25	<2	<2	<9.7	<7.8
1,2,4-Trimethylbenzene	<36	<30	13	<12	<25	<25	14	2	<9.7	<7.8
SVE Well Groups	I - 40D	I - 40D								

- Notes:**
1. All results reported in parts per billion (volume/volume basis).
  2. AST = Aboveground Storage Tank.
  3. SE = Southeast.
  4. AS = Air sparging (on or off).
  5. Branch G = East branch.
  6. Branch H = West branch.
  7. NA = Parameter not analyzed.
  8. SVE = Soil vapor Extraction.

**Table 6**  
**Summary of Summa Canister Sampling for SVE Lines**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

<b>Contaminant</b>	SE Area Branches A-F (AS-ON) <u>18-Apr-00</u>	SE Area Branches A-F (AS-OFF) <u>29-Apr-00</u>	SE Area Branches A-F (AS-ON) <u>6-Oct-00</u>	SE Area Branches A-F (AS-OFF) <u>10-Oct-00</u>	SE Area Branches A-F (AS-ON) <u>27-Apr-01</u>	SE Area Branches A-F (AS-OFF) <u>23-Apr-01</u>	SE Area Branches A-F (AS-ON) <u>29-Sep-01</u>	SE Area Branches A-F (AS-OFF) <u>31-Oct-01</u>	SE Area Branches A-F (AS-ON) <u>23-Apr-02</u>	SE Area Branches A-F (AS-OFF) <u>26-Apr-02</u>
Tetrachloroethene	52	79	52	95	20	<140	<140	<130	47	42
Trichloroethene	400	710	920	750	150	140	280	410	300	330
cis 1,2-Dichloroethene	580	1,400	2,200	1,300	270	150	680	1,500	510	370
trans 1,2-Dichloroethene	59	130	160	130	NA	NA	NA	NA	NA	NA
Vinyl Chloride	12	<13	130	<8.2	60	<140	<140	<260	61	18
1,1,1-Trichloroethane	56	74	93	75	29	<140	<140	<130	27	19
1,1-Dichloroethane	17	29	49	32	<6.9	<140	<140	<130	14	10
Xylenes (total)	<6.7	<13	<18	<8.2	<5.7	<140	<280	<260	<2.2	<1.1
4-Ethyltoluene	<6.7	<13	<18	<8.2	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	<6.7	<13	<18	<8.2	<6.9	<140	<140	<130	<1.3	<0.64
1,2,4-Trimethylbenzene	<6.7	<13	<18	<8.2	<6.9	<140	<140	<130	<1.3	<0.64
SVE Well Groups	I - 40D	I - 40D	I - 40D	I - 40D	I - 40D	I - 40D	I - 40D	I - 40D	I - 40D	I - 40D

- Notes:**
1. All results reported in parts per billion (volume/volume basis).
  2. AST = Aboveground Storage Tank.
  3. SE = Southeast.
  4. AS = Air sparging (on or off).
  5. Branch G = East branch.
  6. Branch H = West branch.
  7. NA = Parameter not analyzed.
  8. SVE = Soil vapor Extraction.

**Table 6**  
**Summary of Summa Canister Sampling for SVE Lines**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

<u>Contaminant</u>	AST Area Branches G&H 11-Jan-96	AST Area Branch G 25-Nov-96	AST Area Branch G 3-Sep-97	AST Area Branch G 18-Nov-97	AST Area Branch G 21-Apr-98	AST Area Branch G 16-Oct-98	AST Area Branch G 21-Apr-99	AST Area Branch G 22-Nov-99	AST Area Branch G 18-Apr-00	AST Area Branch G 2-Oct-00	AST Area Branch G 23-Apr-01	AST Area Branch G 2-Nov-01	AST Area Branch G 23-Apr-02
Tetrachloroethene	1600	<22	460	67	21	6	2.8	<2.0	58	75	15	71	6.6
Trichloroethene	1700	140	1500	420	57	48	8.1	9	590	710	57	150	22
cis 1,2-Dichloroethene	1800	660	820	310	110	50	21	24	330	300	21	130	27
trans 1,2-Dichloroethene	120	63	59	24	4.8	2.2	<2.0	<2.0	28	27	NA	<0.57	NA
Vinyl Chloride	130	<22	<8.4	22	7	<2.0	2.3	3.6	<7.3	<6.1	<0.74	2.5	0.92
1,1,1-Trichloroethane	790	2700	180	65	3.4	2	<2.0	<2.0	55	61	9.9	33	3.6
1,1-Dichloroethane	39	270	11	6	<2	<2.0	<2.0	<2.0	9.1	10	1.3	4.6	0.77
Xylenes (total)	55	<22	25	46	57	<2.0	18	2.1	<7.3	31	3.49	41	2.79
4-Ethyltoluene	190	<22	10	3	16	<2.0	4	2.1	<7.3	<6.1	NA	NA	NA
1,3,5-Trimethylbenzene	120	<22	20	4	6.3	<2.0	2.2	<2.0	<7.3	<6.1	<0.71	<0.69	<0.69
1,2,4-Trimethylbenzene	230	<22	12	4	22	<2.0	7.5	2.8	<7.3	<6.1	<0.71	<0.69	<0.69
SVE Well Groups	41 - 55	41-43,50,53-55	41-43,50,53-55	41-43,50,53-55	41-43,50,53-55	41-43,50,53-55	41-43,50,53-55	41-43,50,53-55	41-43,50,53-55	41-43,50,53-55	41-43,50,53-55	41-43,50,53-55	41-43,50,53-55

**Notes:**

1. All results reported in parts per billion (volume/volume basis).
2. AST = Aboveground Storage Tank.
3. SE = Southeast.
4. AS = Air sparging (on or off).
5. Branch G = East branch.
6. Branch H = West branch.
7. NA = Parameter not analyzed.
8. SVE = Soil vapor Extraction.

**Table 6**  
**Summary of Summa Canister Sampling for SVE Lines**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

<b>Contaminant</b>	AST Area Branch H 25-Nov-96	AST Area Branch H 3-Sep-97	AST Area Branch H 18-Nov-97	AST Area Branch H 21-Apr-98	AST Area Branch H 16-Oct-98	AST Area Branch H 21-Apr-99	AST Area Branch H 22-Nov-99	AST Area Branch H 18-Apr-00	AST Area Branch H 02-Oct-00	AST Area Branch H 23-Apr-01	AST Area Branch H 03-Nov-01	AST Area Branch H 24-Apr-02
Tetrachloroethene	650	<22	<12	30	85	3	4.2	5.4	16	8.0	<0.14	14
Trichloroethene	1800	140	100	100	300	21	23	50	78	48	<0.14	48
cis 1,2-Dichloroethene	1700	460	510	200	250	47	89	150	190	70	<0.14	60
trans 1,2-Dichloroethene	120	57	60	12	15	3	11	14	16	NA	NA	NA
Vinyl Chloride	29	<22	<12	<4.2	<4.4	2	<3.2	<3.1	<2.0	<0.74	<0.14	2.1
1,1,1-Trichloroethane	390	1,300	1,300	210	95	45	170	410	440	140	0.21	70
1,1-Dichloroethane	<8.9	160	160	28	14	5	27	34	40	13	<0.14	8.1
Xylenes (total)	16	<22	32	60	<4.4	15	18	<3.1	<2.0	1.1	<0.28	3.4
4-Ethyltoluene	83	<22	<12	15	<4.4	4	3.9	<3.1	<2.0	NA	NA	NA
1,3,5-Trimethylbenzene	87	<22	<12	6	<4.4	<2.0	<3.2	<3.1	<2.0	<0.71	<0.14	<0.69
1,2,4-Trimethylbenzene	130	<22	<12	20	<4.4	7	<32	<31	<2.0	1.7	<0.14	<0.69
SVE Well Groups	44-49,51-52	44-49,51-52	44-49,51-52	44-49,51-52	44-49,51-52	44-49,51-52	44-49,51-52	44-49,51-52	44-49,51-52	44-49,51-52	44-49,51-52	44-49,51-52

- Notes:**
1. All results reported in parts per billion (volume/volume basis).
  2. AST = Aboveground Storage Tank.
  3. SE = Southeast.
  4. AS = Air sparging (on or off).
  5. Branch G = East branch.
  6. Branch H = West branch.
  7. NA = Parameter not analyzed.
  8. SVE = Soil vapor Extraction.

**Table 7**  
**Groundwater Treatment System Flow Summary**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

	<b>JANUARY 2002</b>	<b>FEBRUARY 2002</b>	<b>MARCH 2002</b>	<b>APRIL 2002</b>	<b>MAY 2002</b>	<b>JUNE 2002</b>
	DATE FLOW (gpd)	DATE FLOW (gpd)	DATE FLOW (gpd)	DATE FLOW (gpd)	DATE FLOW (gpd)	DATE FLOW (gpd)
1	111,000	1	96,000	1	81,000	1
2	111,000	2	79,000	2	83,000	2
3	111,000	3	96,000	3	83,000	3
4	111,000	4	96,000	4	83,000	4
5	111,000	5	96,000	5	83,000	5
6	111,000	6	96,000	6	83,000	6
7	61,000	7	100,000	7	83,000	7
8	64,000	8	102,000	8	83,000	8
9	64,000	9	102,000	9	54,000	9
10	59,000	10	102,000	10	65,000	10
11	83,000	11	76,000	11	65,000	11
12	83,000	12	84,000	12	57,000	12
13	83,000	13	84,000	13	65,000	13
14	83,000	14	84,000	14	65,000	14
15	83,000	15	84,000	15	65,000	15
16	83,000	16	84,000	16	72,000	16
17	83,000	17	84,000	17	72,000	17
18	82,000	18	69,000	18	72,000	18
19	82,000	19	84,000	19	55,000	19
20	82,000	20	63,000	20	88,000	20
21	82,000	21	51,000	21	103,000	21
22	82,000	22	84,000	22	105,000	22
23	82,000	23	84,000	23	105,000	23
24	82,000	24	84,000	24	105,000	24
25	82,000	25	84,000	25	105,000	25
26	82,000	26	84,000	26	105,000	26
27	82,000	27	84,000	27	105,000	27
28	80,000	28	84,000	28	104,000	28
29	82,000			29	105,000	29
30	82,000			30	105,000	30
31	80,000			31	105,000	31
<b>Total Monthly Flow (gallons)</b>	2,639,000		2,400,000		2,609,000	
<b>Average Daily Flow (gallons)</b>	85,129		85,714		84,161	
<b>Total Plant Run-time (minutes)</b>	44,460		38,725		43,612	
<b>Average Flow During Actual Plant Run-Time (gpm)</b>	59.4		62.0		59.8	
					65.9	
					65.5	
					55.1	

**Notes:**

1. gpd = Gallons per day.
2. gpm = Gallons per minute.

**Table 8**  
**Summary of Monitoring Well Construction Details**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

Well Number	TOIC Elevations 2002	Apr-02 Elevations System On	Surface Elevation (AMSL)	Total Depth (bgs)	Well Diameter (inches)	Calculated Well Volume (typical gallons)	Three Well Volumes (typical gallons)	Screen Length (feet)	Bottom Screen Elevation (AMSL) (approx.)	Top Screen Elevation (AMSL) (approx.)	Slot Size (inches)	General Location	Well Installer	Installation Date
MW-1D	826.08	808.58	823.81	150.00	2.00	22.1	66.3	10.00	673.81	683.81	0.010	Southeast area	Montgomery Watson	June-96
MW-2S	825.34	810.29	822.90	23.00	2.00	1.7	5.1	10.00	799.90	809.90	0.010	Southeast area	Warzyn	February-88
MW-3S	824.06	809.37	820.82	20.00	2.00	1.4	4.2	10.00	800.82	810.82	0.010	Southeast area	Warzyn	February-88
MW-4S	843.06	812.04	840.04	37.00	2.00	1.5	4.4	10.00	803.04	813.04	0.010	RW-4 area	Warzyn	February-88
MW-5S	833.02	813.68	830.19	25.00	2.00	1.4	4.2	10.00	805.19	815.19	0.010	Cemetery	Warzyn	February-88
MW-7S	836.12	811.68	833.70	31.00	2.00	1.5	4.4	10.00	802.70	812.70	0.010	RW-4 area	Warzyn	February-88
MW-8S	835.52	813.08	832.11	30.00	2.00	1.8	5.4	10.00	802.11	812.11	0.010	AST area	Warzyn	February-88
MW-8D	834.11	809.31	831.57	150.00	2.00	20.9	62.8	10.00	681.57	691.57	0.010	AST area	Warzyn	August-88
MW-9S	825.44	812.85	822.43	20.00	2.00	1.7	5.1	10.00	802.43	812.43	0.010	AST area	Warzyn	February-88
MW-10S	823.15	809.94	821.66	16.00	2.00	0.7	2.1	10.00	805.66	815.66	0.010	Southeast area	Warzyn	February-88
MW-11S	825.08	808.89	823.26	34.00	2.00	3.2	9.7	10.00	789.26	799.26	0.010	Southeast area	Warzyn	February-88
MW-13S <sup>(6)</sup>	827.19	812.15	823.58	25.00	2.00	2.2	6.7	10.00	798.58	808.58	0.010	Southeast area	Warzyn	July-88
MW-13D <sup>(6)</sup>	826.89	809.18	823.86	145.00	2.00	21.4	64.1	10.00	678.86	688.86	0.010	Southeast area	Warzyn	July-88
MW-14S	821.30	811.95	819.11	18.90	2.00	1.9	5.8	10.00	800.21	810.21	0.010	AST area	Warzyn	July-88
MW-15S	827.64	813.08	825.00	25.00	2.00	2.1	6.4	10.00	800.00	810.00	0.010	AST area	Warzyn	July-90
MW-16S	827.41	813.08	825.23	25.00	2.00	2.1	6.3	10.00	800.23	810.23	0.010	AST area	Warzyn	July-90
MW-17S	826.56	813.27	824.66	40.00	2.00	4.7	14.1	10.00	784.66	794.66	0.007	AST area	Warzyn	August-92
MW-18S	824.16	812.00	821.54	32.50	2.00	3.8	11.3	10.00	789.04	799.04	0.007	AST area	Warzyn	July-92
MW-19S <sup>(6)</sup>	833.87	813.26	830.20	25.00	2.00	1.3	4.0	10.00	805.20	815.20	0.010	AST area	Warzyn	July-92
P-1	834.28	812.54	832.29	28.00	2.00	1.4	4.1	10.00	804.29	814.29	0.010	RW-4 area	Warzyn	July-88
P-2	825.49	812.85	822.90	18.00	2.00	1.3	3.9	10.00	804.90	814.90	0.010	Southeast area	Warzyn	July-88
P-3	823.48	812.82	820.82	20.00	2.00	2.0	5.9	10.00	800.82	810.82	0.010	Southeast area	Warzyn	July-88
P-4	822.67	812.78	820.01	15.00	2.00	1.3	3.8	10.00	805.01	815.01	0.010	AST area	Warzyn	July-88
MW-83AS <sup>(7)</sup>	826.13	810.24	824.39	28.22	2.00	2.3	6.9	5.00	796.17	801.17	-	Southeast area	Peerless- Midwest	May-83
MW-83AD <sup>(7)</sup>	826.15	810.10	824.36	46.95	2.00	5.4	16.1	4.00	777.41	781.41	-	Southeast area	Peerless- Midwest	May-83
MW-83B	840.55	811.08	838.30	60.00	2.00	5.4	16.1	9.70	778.30	788.00	0.010	Southeast area	Montgomery Watson	June-96
MW-83DS <sup>(7)</sup>	825.21	811.02	823.75	36.40	2.00	3.9	11.6	2.00	787.35	789.35	-	Southeast area	Peerless- Midwest	May-83
MW-83DD <sup>(7)</sup>	825.30	811.25	823.82	52.93	2.00	6.6	19.9	0.50	770.89	771.39	-	Southeast area	Peerless- Midwest	May-83
GM-1 <sup>(8)</sup>	841.08	810.77	838.98	34.84	2.00	1.1	3.3	-	804.14	-	-	Landfill	G&M	-
GM-2 <sup>(8)</sup>	833.30	811.12	830.51	38.86	2.00	3.2	9.6	-	791.65	-	-	Landfill	G&M	-
GM-3 <sup>(8)</sup>	822.87	811.14	820.65	27.75	2.00	3.0	9.0	-	792.90	-	-	Landfill	G&M	-
GM-4 <sup>(8)</sup>	827.40	811.01	824.11	27.95	2.00	2.4	7.3	-	796.16	-	-	Landfill	G&M	-

- Notes:
1. TOIC = Top of inner well casing. AMSL = Above mean sea level. bgs = Below ground surface. AST = Aboveground Storage Tank. MW = Monitoring well. P = Piezometer.
  2. Depth to groundwater measured in feet below TOIC.
  3. - = No data available.
  4. Prior to 2001, TOIC elevations based on Ayres-Lewis-Norris-May, Inc. survey on 10/10/97.
  5. TOIC and surface elevations based on Benchmark Surveying, Inc. survey on 7/2/01 and 10/25/01, except where noted.
  6. TOIC elevations based on InSite, Inc. survey on 6/21/02 and 7/2/02, following repair of those wells.
  7. Total depth and screen length revised based on InSite, Inc. field documentation study on 7/17/02.
  8. Groundwater elevations estimated for GM-1 through GM-4 for April 2001 reading; that same value is used for April 2002.

**Table 9**  
**Summary of Groundwater Elevations**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

Well Number	TOIC Elevations July 2002	Jan-02 Elevations System On	Feb-02 Elevations System On	Mar-02 Elevations System On	Apr-02 Elevations System On	May-02 Elevations System On	Jun-02 Elevations System On
MW-1D	826.08	---	---	---	808.58	---	---
MW-2S	825.34	809.05	809.45	809.35	810.29	809.92	808.80
MW-3S	824.06	808.77	809.14	808.42	809.37	808.86	808.04
MW-4S	843.06	---	---	---	812.04	---	---
MW-5S	833.02	---	---	---	813.68	---	---
MW-7S	836.12	---	---	---	811.68	---	---
MW-8S	835.52	---	---	---	813.08	---	---
MW-8D	834.11	---	---	---	809.31	---	---
MW-9S	825.44	---	---	---	812.85	---	---
MW-10S	823.15	808.96	809.27	808.90	809.94	809.37	808.37
MW-11S	825.08	809.75	808.96	808.94	808.89	809.59	807.71
MW-13S <sup>(6)</sup>	827.19	810.90	811.55	812.03	812.15	811.85	811.16
MW-13D <sup>(6)</sup>	826.89	---	---	---	809.18	---	---
MW-14S	821.30	---	---	---	811.95	---	---
MW-15S	827.64	---	---	---	813.08	---	---
MW-16S	827.41	---	---	---	813.08	---	---
MW-17S	826.56	---	---	---	813.27	---	---
MW-18S	824.16	---	---	---	812.00	---	---
MW-19S <sup>(6)</sup>	833.87	---	---	---	813.26	---	---
P-1	834.28	---	---	---	812.54	---	---
P-2	825.49	---	---	---	812.85	---	---
P-3	823.48	---	---	---	812.82	---	---
P-4	822.67	---	---	---	812.78	---	---
MW-83AS	826.13	809.00	809.39	809.27	810.24	809.86	808.75
MW-83AD	826.15	810.55	810.63	809.64	810.10	810.66	809.00
MW-83B	840.55	---	---	---	811.08	---	---
MW-83DS	825.21	811.22	811.33	810.83	811.02	811.39	810.10
MW-83DD	825.30	---	---	---	811.25	---	---
GM-1	841.08	---	---	---	---	---	---
GM-2	833.30	---	---	---	---	---	---
GM-3	822.87	---	---	---	---	---	---
GM-4	827.40	---	---	---	---	---	---

**Notes:**

1. TOIC = Top of inner well casing. P = Piezometer.
2. Depth to groundwater measured in feet below TOIC.
3. ---- = No data available.
4. Prior to 2001, TOIC elevations based on Ayres-Lewis-Norris-May, Inc. survey on 10/10/97.
5. TOIC and surface elevations based on Benchmark Surveying, Inc. survey on 7/2/01 and 10/25/01, except where noted.
6. TOIC elevations based on InSite, Inc. survey on 6/21/02 and 7/02/02, following repair of those wells.

**Table 10**  
**Monitoring Well Sample Results**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

<b>Parameter</b>	<b>Date Sampled</b>	<b>Monitoring Well Number</b>							
		8/1988	6/7/1996	11/6/1996	6/12/1997	10/14/1998	10/13/1999	10/2/2000	10/31/2001
<b>VOCs (ug/L)</b>									
Acetone		ND	ND	NA	NA	NA	ND	ND	ND
Bromomethane		ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene		ND	ND	NA	NA	NA	ND	ND	ND
2-Butanone		ND	ND	NA	NA	NA	NA	NA	NA
Carbon Disulfide		ND	ND	NA	NA	NA	ND	ND	ND
Chloroethane		ND	ND	NA	ND	ND	ND	ND	ND
1,1-Dichloroethane		ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene		ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane		ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene		ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene		ND	ND	ND	ND	ND	ND	ND	ND
Total 1,2-Dichloroethene		ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane		ND	ND	ND	ND	ND	ND	ND	ND
Chloroform		ND	ND	ND	ND	ND	ND	ND	ND
4-methyl-2-Pentanone		ND	ND	NA	NA	NA	ND	ND	ND
1,1,1-Trichloroethane		ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane		ND	ND	NA	NA	NA	ND	ND	ND
Tetrachloroethene		ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene		ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene		ND	ND	NA	NA	NA	ND	ND	ND
Vinyl Chloride		ND	ND	ND	ND	ND	ND	ND	ND
Benzene		ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (total)		ND	ND	ND	ND	ND	ND	ND	ND
<b>Total VOCs</b>		ND	ND	ND	ND	ND	ND	ND	ND
<b>Metals (mg/L)</b>									
Arsenic	0.0059	0.005	ND	ND	ND	ND	ND	ND	ND
Barium	0.132	0.13	0.13	0.12	0.16	0.68	0.14	0.18	
Cadmium	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	ND	ND	ND	ND	0.013	ND	ND	ND	ND
Cyanide, Total	0.009	ND	ND	ND	ND	ND	ND	ND	ND
Lead	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ND	ND	ND	0.051	ND	ND	ND	ND	ND
Zinc	0.013	0.06	ND	0.025	0.031	0.13	ND	0.068	

Notes:

1. In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
2. Volatile organic compounds (VOCs) reported in micrograms per liter (ug/L).
3. Metals reported in milligrams per liter (mg/L).
4. SE = Southeast.
5. ND = Not detected above the method detection limit.
6. NA = Not analyzed.

**Table 10**  
**Monitoring Well Sample Results**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

<b>Parameter</b>	<b>Date Sampled</b>	<b>Monitoring Well Number</b>									
		3/1988	8/1988	11/29/1995	8/27/1996	11/6/1996	6/13/1997	10/14/1998	10/13/1999	10/2/2000	10/31/2001
<b>VOCs (ug/L)</b>											
Acetone		ND	ND	NA	NA	NA	NA	NA	ND	ND	ND
Bromomethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene		ND	ND	ND	ND	NA	NA	NA	ND	ND	ND
2-Butanone		ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide		ND	2.3	NA	NA	NA	NA	NA	ND	ND	ND
Chloroethane		ND	ND	ND	ND	NA	ND	ND	ND	ND	ND
1,1-Dichloroethane		ND	23	ND	ND	1.5	ND	ND	ND	ND	ND
1,1-Dichloroethene		ND	16	ND	ND	1.9	ND	ND	ND	ND	ND
1,2-Dichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene		NA	NA	NA	3,500	2,600	1,200	1,100	1,400	840	733
trans-1,2-Dichloroethene		NA	NA	NA	110	92	45	54	33	38	42.6
Total 1,2-Dichloroethene	24,000	6,900	2,200	3,610	2,692	1,245	1,154	1,433	878	776	
1,2-Dichloropropane		ND	8.4	ND	ND	3.7	ND	ND	ND	ND	2.1
Chloroform		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-methyl-2-Pentanone		ND	ND	NA	NA	NA	NA	NA	ND	ND	ND
1,1,1-Trichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane		ND	ND	ND	ND	NA	NA	NA	ND	ND	ND
Tetrachloroethene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene		ND	1.1	ND	ND	ND	ND	ND	ND	ND	5.0
1,2,4-Trimethylbenzene		ND	ND	ND	ND	NA	NA	NA	ND	ND	ND
Vinyl Chloride	1,300	430	380	400	260	90	120	310	67	3.3	
Benzene		ND	1.1	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	
Toluene		ND	3.4	ND	ND	ND	ND	ND	ND	ND	
Xylenes (total)		ND	ND	ND	ND	ND	ND	ND	ND	ND	
Total VOCs	25,300	7,385	2,580	4,010	2,959	1,335	1,274	1,743	945	786	
<b>Metals (mg/L)</b>											
Arsenic		0.015	0.0234	0.005	ND	ND	ND	0.011	ND	ND	
Barium		0.306	0.32	0.08	0.04	ND	ND	0.048	0.28	0.032	0.041
Cadmium		ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chromium, Total		ND	ND	ND	ND	ND	ND	ND	ND	ND	
Cyanide, Total		0.015	ND	ND	ND	ND	ND	ND	ND	ND	
Lead		ND	ND	ND	ND	ND	ND	ND	ND	ND	
Nickel		ND	0.0151	ND	ND	ND	ND	ND	ND	0.013	ND
Zinc		ND	0.0126	ND	ND	ND	ND	ND	0.27	ND	ND

**Notes:**

1. In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
2. Volatile organic compounds (VOCs) reported in micrograms per liter (ug/L).
3. Metals reported in milligrams per liter (mg/L).
4. SE = Southeast.
5. ND = Not detected above the method detection limit.
6. NA = Not analyzed.

**Table 10**  
**Monitoring Well Sample Results**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

<b>Parameter</b>	<b>Date Sampled</b>	Monitoring Well Number MW4S (RW4 Area)													
		8/1988	7/23/1992	11/28/1995	8/27/1996	6/12/1997	11/18/1997	4/21/1998	10/15/1998	4/12/1999	10/13/1999	5/4/2000	10/2/2000	4/19/2001	10/31/2001
<b>VOCs (ug/L)</b>															
Acetone	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	ND	NA	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	ND	4.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total 1,2-Dichloroethene	ND	ND	ND	4.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-methyl-2-Pentanone	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	ND	NA	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	ND	NA	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	1	ND	ND	ND	ND	12	15	17	29	33	23	13	7.4	6.1
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (total)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>Total VOCs</b>	<b>3</b>	<b>1</b>	<b>ND</b>	<b>17</b>	<b>ND</b>	<b>ND</b>	<b>12</b>	<b>15</b>	<b>17</b>	<b>29</b>	<b>33</b>	<b>23</b>	<b>13</b>	<b>7</b>	<b>6</b>
<b>Metals (mg/L)</b>															
Arsenic	NA	ND	0.006	ND	ND	ND	ND	ND	0.0082	ND	0.0081	ND	ND	ND	ND
Barium	NA	0.159	0.13	0.11	0.67	0.28	0.48	0.3	0.49	0.58	0.79	1.1	1.1	0.26	0.26
Cadmium	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyanide, Total	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	NA	ND	ND	0.0032	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.16
Nickel	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	NA	0.035	0.02	ND	0.036	ND	ND	0.023	0.025	ND	ND	ND	0.022	ND	ND

Notes:

1. In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
2. Volatile organic compounds (VOCs) reported in micrograms per liter (ug/L).
3. Metals reported in milligrams per liter (mg/L).
4. RW = Recovery well.
5. ND = Not detected above the method detection limit.
6. NA = Not analyzed.

**Table 10**  
**Monitoring Well Sample Results**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

Parameter	Date Sampled	Monitoring Well Number MW7S (RW4 Area)									
		3/1988	8/1988	11/29/1995	8/27/1996	11/6/1996	6/12/1997	10/15/98	10/13/1999	10/2/2000	10/30/2001
<b>VOCs (ug/L)</b>											
Acetone		ND	ND	NA	NA	NA	NA	ND	ND	ND	ND
Bromomethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone		ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide		ND	ND	NA	NA	NA	NA	ND	ND	ND	ND
Chloroethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane		ND	23	7.4	10	7.4	5.1	ND	ND	ND	2.9
1,1-Dichloroethene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene		NA	NA	1,100	980	780	640	87	96	120	187
trans-1,2-Dichloroethene		NA	NA	59	74	55	48	23	10	12	21.2
Total 1,2-Dichloroethene		2,600	1,900	1,159	1,054	855	688	110	106	132	208.2
1,2-Dichloropropane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-methyl-2-Pentanone		ND	ND	NA	NA	NA	NA	NA	ND	ND	ND
1,1,1-Trichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene		ND	ND	3.2	92	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride		ND	1.3	ND	ND	ND	ND	ND	6.1	ND	ND
Benzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (total)		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOCs		2,600	1,924	1,170	1,156	862	693	110	112	132	211
<b>Metals (mg/L)</b>											
Arsenic		0.005	0.003	ND	ND	ND	ND	ND	ND	ND	ND
Barium		0.286	0.191	0.17	0.12	0.16	0.16	0.2	0.77	0.22	0.17
Cadmium		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyanide, Total		ND	0.016	0.095	ND	ND	ND	ND	ND	ND	ND
Lead		ND	ND	ND	0.0099	ND	ND	ND	ND	ND	ND
Nickel		ND	ND	ND	0.06	ND	ND	ND	ND	0.006	ND
Zinc		ND	0.0263	ND	0.02	ND	ND	ND	0.22	ND	ND

Notes:

- In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
- Volatile organic compounds (VOCs) reported in micrograms per liter (ug/L).
- Metals reported in milligrams per liter (mg/L).
- RW = Recovery well.
- ND = Not detected above the method detection limit.
- NA = Not analyzed.

**Table 10**  
**Monitoring Well Sample Results**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

Parameter	Date Sampled	Monitoring Well Number MW9S (AST Area)															
		3/1988	8/1988	7/24/1992	11/7/1995	8/27/1996	6/12/1997	11/18/1997	4/21/1998	10/15/1998	4/12/1999	10/20/1999	5/4/2000	10/2/2000	4/19/2001	10/30/2001	4/23/2002
<b>VOCs (ug/L)</b>																	
Acetone		ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene		ND	ND	ND	4.2	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone		ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide		ND	0.59	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane		ND	8.3	ND	18	ND	13	ND	16	17	12	5.5	59	13	ND	1.5	1.7
1,1-Dichloroethene		ND	92	ND	56	ND	15	76	17	51	13	18	67	63	ND	5.1	7.6
1,2-Dichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene		NA	NA	NA	30,000	24,000	18,000	NA	10,000	19,000	8,800	NA	43,000	37,000	5,400	3,360	3,600
trans-1,2-Dichloroethene		NA	NA	NA	140	ND	200	NA	190	170	95	NA	350	210	ND	74.9	63.3
Total 1,2-Dichloroethene	33,000	32,000	23,000	30,140	24,000	18,200	42,390	10,190	19,170	8,895	8,003	43,350	37,210	5,400	3,434	3,663	
1,2-Dichloropropane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform		ND	ND	ND	ND	ND	ND	ND	ND	ND	13	ND	ND	ND	ND	ND	ND
4-methyl-2-Pentanone		ND	2.2	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane		ND	9.9	ND	ND	ND	ND	ND	13	21	13	ND	5.6	6.8	ND	1.3	2.5
1,1,2-Trichloroethane		ND	ND	ND	2.8	ND	ND	ND	8	12	ND	ND	6.4	ND	ND	ND	ND
Dibromomethane		ND	ND	NA	1.8	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene		ND	27	ND	36	ND	78	220	280	250	720	67	37	97	ND	28	45.9
Trichloroethylene	18,000	18,000	9,700	17,000	28,000	24,000	67,000	25,000	12,000	16,000	5,800	5,800	21,000	16,000	4,590	9,300	
1,2,4-Trimethylbenzene		ND	ND	NA	4.3	ND	ND	NA	ND	ND	6.2	ND	ND	ND	ND	ND	ND
Vinyl Chloride		ND	480	340	1,100	680	200	380	59	ND	72	140	260	140	ND	3.2	4.1
Benzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene		ND	21	ND	ND	ND	ND	ND	8.5	9.7	22	ND	ND	ND	ND	ND	ND
Xylenes (total)		ND	ND	ND	ND	ND	ND	ND	ND	ND	7.3	ND	ND	ND	ND	ND	ND
Total VOCs	51,000	50,641	33,040	48,363	52,680	42,506	110,066	35,592	31,531	25,774	14,034	49,585	58,530	21,400	8,063	13,025	
<b>Metals (mg/L)</b>																	
Arsenic		0.008	0.0106	0.011	0.01	0.006	ND	ND	ND	ND	0.026	ND	0.0051	ND	ND	ND	
Barium		0.181	0.139	0.144	0.11	0.04	ND	ND	0.035	0.079	0.04	0.059	0.08	0.055	0.027	0.053	0.027
Cadmium		ND	ND	271	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0052	ND	ND	ND	ND	ND
Cyanide, Total		0.03	0.014	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead		ND	ND	ND	ND	0.0031	ND	ND	0.042	ND	ND	0.0026	ND	ND	ND	ND	0.15
Nickel		ND	0.0106	ND	ND	ND	ND	ND	ND	ND	0.027	ND	0.032	0.0073	0.01	0.013	
Zinc		ND	0.0212	0.015	ND	ND	0.023	0.03	ND	ND	0.062	ND	ND	ND	ND	ND	

- Notes:
- In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
  - Volatile organic compounds (VOCs) reported in micrograms per liter (ug/L).
  - Metals reported in milligrams per liter (mg/L).
  - AST = Aboveground Storage Tank.
  - ND = Not detected above the method detection limit.
  - NA = Not analyzed.

**Table 10**  
**Monitoring Well Sample Results**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

Parameter	Date Sampled	Monitoring Well Number MW10S (SE Area)														
		3/1988	8/1988	7/23/1992	11/8/1995	8/27/1996	11/18/1997	4/21/1998	10/15/1998	4/12/1999	10/13/1999	5/4/2000	10/2/2000	4/19/2001	10/31/2001	4/23/2002
<b>VOCs (ug/L)</b>																
Acetone		ND	ND	ND	NA	NA	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND
Bromomethane		ND	ND	ND	4.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene		ND	ND	NA	ND	ND	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND
2-Butanone		ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide		ND	ND	ND	NA	NA	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND
Chloroethane		ND	ND	ND	2.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane		630	140	91	ND	ND	ND	ND	28	6.3	7.9	ND	5.7	ND	ND	1.9
1,1-Dichloroethene		ND	20	ND	ND	ND	ND	ND	ND	ND	6.8	ND	ND	ND	ND	1.4
1,2-Dichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene		NA	NA	NA	37,000	15,000	NA	5,300	3,300	7,900	6.8	3,600	3,400	1,900	118	2,980
trans-1,2-Dichloroethene		NA	NA	NA	440	350	NA	100	170	200	12,000	170	100	130	6.2	162
Total 1,2-Dichloroethene		56,000	26,000	8,700	37,440	15,350	8,140	5,400	3,470	8,100	12,006	3,770	3,500	2,030	124	3,142
1,2-Dichloropropane		ND	ND	ND	6.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-methyl-2-Pentanone		ND	ND	ND	NA	NA	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane		ND	ND	NA	ND	ND	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene		ND	2	ND	5	70	ND	ND	11	ND	ND	ND	ND	ND	ND	3.4
1,2,4-Trimethylbenzene		ND	ND	NA	ND	ND	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride		5,500	2,800	3,100	2,700	650	370	130	1,000	320	700	ND	120	ND	ND	46.6
Benzene		ND	7	ND	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene		ND	4	ND	5.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene		ND	3,500	9,000	270	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (total)		ND	28	96	21.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOCs		62,130	32,501	20,987	40,456	16,120	8,510	5,530	4,509	8,426	12,721	3,770	3,626	2,030	124	3,195
<b>Metals (mg/L)</b>																
Arsenic		0.009	ND	ND	0.006	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium		0.239	0.0537	0.137	0.04	0.04	0.062	ND	0.032	0.023	0.36	0.068	0.033	0.047	0.064	0.061
Cadmium		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total		0.017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyanide, Total		0.006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0094	ND	0.037
Lead		ND	ND	ND	ND	0.0028	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.17
Nickel		ND	ND	0.021	ND	ND	0.021	ND	ND	ND	ND	ND	0.009	0.0052	0.012	ND
Zinc		ND	0.0089	ND	ND	ND	ND	ND	ND	ND	0.34	ND	ND	ND	ND	ND

- Notes:
1. In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
  2. Volatile organic compounds (VOCs) reported in micrograms per liter (ug/L).
  3. Metals reported in milligrams per liter (mg/L).
  4. SE = Southeast.
  5. ND = Not detected above the method detection limit.
  6. NA = Not analyzed.

**Table 10**  
**Monitoring Well Sample Results**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

Parameter	Date Sampled	Monitoring Well Number MW11S (SE Area)									
		3/1988	8/1988	7/24/1992	11/8/1995	8/27/1996	11/6/1996	6/13/1997	10/15/1998	10/13/1999	10/2/2000
<b>VOCs (ug/L)</b>											
Acetone		ND	ND	ND	NA	NA	NA	NA	ND	ND	ND
Bromomethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene		ND	ND	NA	ND	ND	NA	NA	ND	ND	ND
2-Butanone		ND	ND	ND	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide		ND	ND	ND	NA	NA	NA	NA	ND	ND	ND
Chloroethane		ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
1,1-Dichloroethane		ND	ND	ND	19	5.3	8.3	6.6	ND	5.4	5.7
1,1-Dichloroethene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene		NA	NA	ND	280	150	200	170	160	440	460
trans-1,2-Dichloroethene		NA	NA	ND	15	6.5	10	10	ND	12	15.7
Total 1,2-Dichloroethene		44	19	ND	295	156.5	210	180	160	440	472
1,2-Dichloropropane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-methyl-2-Pentanone		ND	ND	ND	NA	NA	NA	NA	ND	ND	ND
1,1,1-Trichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane		ND	ND	NA	ND	ND	NA	NA	ND	ND	ND
Tetrachloroethylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene		ND	ND	ND	4.1	17	3.8	4.3	8	ND	6.2
1,2,4-Trimethylbenzene		ND	ND	NA	ND	ND	NA	NA	ND	ND	ND
Vinyl Chloride		4	3	20	18	12	14	18	64	190	160
Benzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	1.5	ND	ND	ND	ND	ND
Xylenes (total)		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOCs		48	22	20	336	192	236	209	232	635	644
<b>Metals (mg/L)</b>											
Arsenic		ND	ND	ND	0.001	ND	ND	ND	ND	ND	ND
Barium		0.418	0.285	0.17	0.11	0.05	ND	ND	0.042	0.082	0.059
Cadmium		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyanide, Total		ND	0.04	ND	ND	ND	ND	ND	ND	ND	ND
Lead		ND	ND	ND	ND	0.0028	ND	ND	0.015	ND	ND
Nickel		ND	ND	ND	ND	0.03	ND	ND	ND	0.006	ND
Zinc		0.026	0.0145	0.122	ND	ND	ND	0.021	ND	0.025	ND

- Notes:
- In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
  - Volatile organic compounds (VOCs) reported in micrograms per liter (ug/L).
  - Metals reported in milligrams per liter (mg/L).
  - SE = Southeast.
  - ND = Not detected above the method detection limit.
  - NA = Not analyzed.

**Table 10**  
**Monitoring Well Sample Results**  
**Wayne Reclamation and Recycling**  
**Columbia, Indiana**

Parameter	Date Sampled	Monitoring Well Number		
		8/1988	MW13S (SE Area) 11/1/2001	4/23/2002
<b>VOCs (ug/L)</b>				
Acetone		ND	ND	ND
Bromomethane		ND	ND	ND
n-Butylbenzene		ND	ND	ND
2-Butanone		ND	NA	NA
Carbon Disulfide		ND	ND	ND
Chloroethane		ND	ND	ND
1,1-Dichloroethane		ND	ND	ND
1,1-Dichloroethene		ND	ND	ND
1,2-Dichloroethane		ND	ND	ND
cis-1,2-Dichloroethene		NA	350	200
trans-1,2-Dichloroethene		NA	11.7	6.4
Total 1,2-Dichloroethene		28	361.7	206.4
1,2-Dichloropropane		ND	17.0	8.7
Chloroform		ND	ND	ND
4-methyl-2-Pentanone		ND	ND	ND
1,1,1-Trichloroethane		ND	ND	ND
1,1,2-Trichloroethane		ND	ND	ND
Dibromomethane		ND	ND	ND
Tetrachloroethene		ND	ND	ND
Trichloroethene		ND	152	140
1,2,4-Trimethylbenzene		ND	ND	ND
Vinyl Chloride		ND	9.4	12
Benzene		ND	ND	ND
Ethylbenzene		ND	ND	ND
Toluene		ND	ND	ND
Xylenes (total)		ND	ND	ND
Total VOCs		28	540	367
<b>Metals (mg/L)</b>				
Arsenic		0.0036	ND	ND
Barium		0.0705	0.19	0.12
Cadmium		ND	ND	ND
Chromium, Total		ND	ND	ND
Cyanide, Total		0.048	NA	NA
Lead		ND	ND	0.16
Nickel		0.0167	ND	ND
Zinc		0.0542	ND	ND

Notes:

1. In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
2. Volatile organic compounds (VOCs) reported in micrograms per liter (ug/L).
3. Metals reported in milligrams per liter (mg/L).
4. SE = Southeast.
5. ND = Not detected above the method detection limit.
6. NA = Not analyzed.

**Table 10**  
**Monitoring Well Sample Results**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

Parameter	Date Sampled	Monitoring Well Number
		MW13D (SE Area)
<b>VOCs (ug/L)</b>		
Acetone		ND
Bromomethane		ND
n-Butylbenzene		ND
2-Butanone		ND
Carbon Disulfide		ND
Chloroethane		ND
1,1-Dichloroethane		ND
1,1-Dichloroethene		ND
1,2-Dichloroethane		ND
cis-1,2-Dichloroethene		ND
trans-1,2-Dichloroethene		ND
Total 1,2-Dichloroethene		ND
1,2-Dichloropropane		ND
Chloroform		ND
4-methyl-2-Pentanone		ND
1,1,1-Trichloroethane		ND
1,1,2-Trichloroethane		ND
Dibromomethane		ND
Tetrachloroethene		ND
Trichloroethene		ND
1,2,4-Trimethylbenzene		ND
Vinyl Chloride		ND
Benzene		ND
Ethylbenzene		ND
Toluene		ND
Xylenes (total)		ND
<b>Total VOCs</b>		ND
<b>Metals (mg/L)</b>		
Arsenic		<0.005
Barium		0.10
Cadmium		<0.03
Chromium, Total		<0.04
Cyanide, Total		NA
Lead		<0.08
Nickel		<0.02
Zinc		<0.05

**Notes:**

1. In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
2. Volatile organic compounds (VOCs) reported in micrograms per liter (ug/L).
3. Metals reported in milligrams per liter (mg/L).
4. SE = Southeast.
5. ND = Not detected above the method detection limit.
6. NA = Not analyzed.
7. Data suspect due to well integrity.

**Table 10**  
**Monitoring Well Sample Results**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

Parameter	Date Sampled	Monitoring Well Number MW14S (AST Area)														
		8/1988	7/23/1992	11/7/1995	8/27/1996	6/11/1997	11/18/1997	4/21/1998	10/15/1998	4/12/1999	10/14/1999	5/4/2000	10/2/2000	4/19/2001	10/30/2001	4/23/2002
<b>VOCs (ug/L)</b>																
Acetone	ND	ND	NA	NA	NA	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	ND	NA	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	ND	ND	NA	NA	NA	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	5.4	22	6.6	6.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	270	86	320	260	150	160	74	63	19	21	12	13	5.7	7.4	8.4	
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	1.1	1.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NA	NA	45	20	3.9	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	NA	NA	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total 1,2-Dichloroethene	650	71	45	20	3.9	2.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-methyl-2-Pentanone	ND	ND	NA	NA	NA	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	5	10	9.1	4.9	2.6	ND	ND	5.2	ND	ND	ND	ND	14	15.1	4.7
1,1,2-Trichloroethane	6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	ND	NA	ND	ND	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	5.5	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	ND	NA	ND	ND	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	140	47	15	5.4	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (total)			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOCs	1,066	209	402	329	167	172	74	63	24	21	12	13	20	23	13	
<b>Metals (mg/L)</b>																
Arsenic	0.0054	0.0077	0.014	0.004	ND	ND	ND	ND	0.0079	ND	0.021	ND	ND	ND	ND	
Barium	0.0891	0.062	0.05	0.05	0.066	0.069	0.066	0.084	0.056	0.1	0.095	0.11	0.07	0.065	0.089	
Cadmium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chromium, Total	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Cyanide, Total	0.035	0.006	ND	ND	ND	ND	0.0078	ND	0.017	ND	0.009	ND	0.014	ND		
Lead	ND	ND	ND	0.0065	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.17	
Nickel	ND	ND	ND	0.02	0.027	0.026	0.022	ND	ND	ND	ND	0.009	0.016	0.01	0.011	
Zinc	0.0035	0.021	ND	ND	0.026	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

- Notes:
- In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
  - Volatile organic compounds (VOCs) reported in micrograms per liter (ug/L).
  - Metals reported in milligrams per liter (mg/L).
  - AST = Aboveground Storage Tank.
  - ND = Not detected above the method detection limit.
  - NA = Not analyzed.

**Table 10**  
**Monitoring Well Sample Results**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

Parameter	Date Sampled	Monitoring Well Number				
		8/6/1992	11/29/1995	MW15S (AST) 6/12/1997	10/14/1999	10/2/2000
<b>VOCs (ug/L)</b>						
Acetone	ND	NA	NA	ND	ND	ND
Bromomethane	ND	ND	ND	ND	ND	ND
n-Butylbenzene	NA	ND	ND	ND	ND	ND
2-Butanone	ND	NA	NA	NA	NA	NA
Carbon Disulfide	ND	NA	NA	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	6	5.8	4.9	ND	ND	1.5
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	10	13	41	NA	ND	32.9
trans-1,2-Dichloroethene	ND	ND	2.5	NA	ND	2.3
Total 1,2-Dichloroethene	10	13	43.5	ND	ND	35.2
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND	ND
4-methyl-2-Pentanone	ND	NA	NA	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND
Dibromomethane	NA	ND	ND	ND	ND	ND
Tetrachloroethylene	ND	ND	ND	ND	ND	ND
Trichloroethylene	ND	ND	65	5.8	11	145
1,2,4-Trimethylbenzene	NA	ND	ND	ND	ND	ND
Vinyl Chloride	ND	28	2.3	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND
Toluene	ND	1.1	ND	ND	ND	ND
Xylenes (total)	ND	ND	ND	ND	ND	ND
<b>Total VOCs</b>	<b>16</b>	<b>48</b>	<b>116</b>	<b>6</b>	<b>11</b>	<b>182</b>
<b>Metals (mg/L)</b>						
Arsenic	0.0196	ND	ND	0.0059	ND	ND
Barium	0.219	0.14	0.053	0.086	0.097	0.09
Cadmium	0.015	ND	ND	ND	ND	ND
Chromium, Total	ND	0.011	ND	ND	ND	ND
Cyanide, Total	ND	ND	ND	ND	ND	ND
Lead	ND	ND	0.0038	ND	ND	ND
Nickel	ND	ND	ND	ND	0.007	ND
Zinc	0.047	ND	0.055	ND	ND	ND

Notes:

- In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
- Volatile organic compounds (VOCs) reported in micrograms per liter (ug/L).
- Metals reported in milligrams per liter (mg/L).
- AST = Aboveground Storage Tank.
- ND = Not detected above the method detection limit.
- NA = Not analyzed.

**Table 10**  
**Monitoring Well Sample Results**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

Parameter	Date Sampled	Monitoring Well Number MW16S (AST Area)						
		8/6/1992	11/7/1995	11/6/1996	6/11/1997	10/15/1998	10/14/1999	10/2/2000
<b>VOCs (ug/L)</b>								
Acetone		ND	NA	NA	NA	ND	ND	ND
Bromomethane		ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene		NA	ND	NA	NA	ND	ND	ND
2-Butanone		ND	NA	NA	NA	NA	NA	NA
Carbon Disulfide		ND	NA	NA	NA	ND	ND	ND
Chloroethane		ND	ND	NA	ND	ND	ND	ND
1,1-Dichloroethane	55	85	26	58	37	38	ND	6.1
1,1-Dichloroethene		ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane		ND	1.4	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene		NA	190	50	75	NA	93	18.5
trans-1,2-Dichloroethene		NA	ND	1.3	5.3	NA	NA	ND
Total 1,2-Dichloroethene	41	190	51.3	80.3	130	93	93	18.5
1,2-Dichloropropane		ND	ND	ND	ND	ND	ND	ND
Chloroform		ND	ND	ND	ND	ND	ND	ND
4-methyl-2-Pentanone		ND	NA	NA	NA	NA	ND	ND
1,1,1-Trichloroethane	8	2.7	1	2.9	ND	6.9	ND	1.4
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND	ND
Dibromomethane		NA	ND	NA	NA	ND	ND	ND
Tetrachloroethene		ND	ND	ND	ND	ND	ND	ND
Trichloroethene		ND	6.9	ND	ND	47	ND	ND
1,2,4-Trimethylbenzene		NA	ND	NA	NA	NA	ND	ND
Vinyl Chloride	100	41	19	16	37	15	ND	ND
Benzene		ND	ND	ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	ND	ND	ND
Xylenes (total)		ND	ND	ND	ND	ND	ND	ND
<b>Total VOCs</b>	<b>204</b>	<b>327</b>	<b>97</b>	<b>157</b>	<b>251</b>	<b>153</b>	<b>93</b>	<b>27</b>
<b>Metals (mg/L)</b>								
Arsenic	0.0025	0.003	ND	ND	ND	ND	0.021	ND
Barium	0.05	0.06	0.065	ND	0.054	0.059	0.11	0.034
Cadmium	ND	ND	ND	0.00024	ND	ND	ND	ND
Chromium, Total	ND	ND	ND	ND	ND	ND	ND	ND
Cyanide, Total	ND	ND	ND	0.011	ND	ND	0.009	ND
Lead	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ND	ND	ND	ND	ND	ND	0.009	ND
Zinc	0.038	ND	ND	0.028	ND	ND	ND	ND

- Notes:
1. In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
  2. Volatile organic compounds (VOCs) reported in micrograms per liter (ug/L).
  3. Metals reported in milligrams per liter (mg/L).
  4. AST = Aboveground Storage Tank.
  5. ND = Not detected above the method detection limit.
  6. NA = Not analyzed.

**Table 10**  
**Monitoring Well Sample Results**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

Parameter	Monitoring Well Number MW18S (AST Area)	
	8/1/1992 <sup>(7)</sup>	11/1/2001
<b>VOCs (ug/L)</b>		
Acetone	ND	ND
Bromomethane	ND	ND
n-Butylbenzene	ND	ND
2-Butanone	NA	NA
Carbon Disulfide	ND	ND
Chloroethane	ND	ND
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethane	ND	ND
cis-1,2-Dichloroethene	ND	ND
trans-1,2-Dichloroethene	ND	ND
Total 1,2-Dichloroethene	ND	ND
1,2-Dichloropropane	ND	ND
Chloroform	ND	ND
4-methyl-2-Pentanone	ND	ND
1,1,1-Trichloroethane	ND	ND
1,1,2-Trichloroethane	ND	ND
Dibromomethane	ND	ND
Tetrachloroethene	ND	ND
Trichloroethene	ND	ND
1,2,4-Trimethylbenzene	ND	ND
Vinyl Chloride	ND	1.6
Benzene	ND	ND
Ethylbenzene	ND	ND
Toluene	ND	ND
Xylenes (total)	ND	ND
<b>Total VOCs</b>	<b>ND</b>	<b>2</b>
<b>Metals (mg/L)</b>		
Arsenic	ND	ND
Barium	0.177	0.084
Cadmium	ND	ND
Chromium, Total	ND	ND
Cyanide, Total	NA	NA
Lead	ND	ND
Nickel	ND	ND
Zinc	5.56	0.2

**Notes:**

1. In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
2. Volatile organic compounds (VOCs) reported in micrograms per liter (ug/L).
3. Metals reported in milligrams per liter (mg/L).
4. AST = Aboveground Storage Tank.
5. ND = Not detected above the method detection limit.
6. NA = Not analyzed.
7. 8/1/1992 data from Technical Memorandum (Warzyn, November 1992).

**Table 10**  
**Monitoring Well Sample Results**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

Parameter	Date Sampled	Monitoring Well Number MW83AS (SE Area)															
		3/1988 <sup>(7)</sup>	8/1988 <sup>(7)</sup>	7/23/1992	11/8/1995	8/27/1996	6/13/1997	11/18/1997	4/21/1998	10/15/98	4/12/1999	10/13/1999	5/4/2000	10/2/2000	4/19/2001	10/31/2001	4/23/2002
<b>VOCs (ug/L)</b>																	
Acetone	ND	ND	ND	NA	NA	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	ND	ND	NA	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	ND	ND	ND	NA	NA	NA	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	5.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	48	72	51	56	ND	42	39	43	38	26	ND	31	29.1	
1,1-Dichloroethene	ND	ND	ND	ND	ND	4.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	NA	15,000	15,000	11,000	NA	5,200	1,300	4,000	3,400	2,200	1,500	750	1,730	1,190	
trans-1,2-Dichloroethene	ND	ND	NA	68	110	56	NA	ND	32	21	17	14	5.9	ND	21	12.6	
Total 1,2-Dichloroethene	ND	ND	12,000	15,068	15,110	11,056	8,700	5,200	1,332	4,021	3,417	2,214	1,506	750	1,751	1,203	
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-methyl-2-Pentanone	ND	ND	ND	NA	NA	NA	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	ND	ND	NA	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	ND	ND	NA	ND	ND	NA	ND	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	110	140	1,200	1,700	1,600	1,400	1,400	900	610	990	830	550	380	220	399	387	
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (total)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOCs	110	141	13,200	16,816	16,782	12,516	10,156	6,100	1,984	5,050	4,290	2,802	1,912	970	2,181	1,619	
<b>Metals (mg/L)</b>																	
Arsenic	ND	ND	ND	0.003	ND	0.0022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	0.186	0.117	0.111	0.18	0.09	ND	ND	0.048	0.055	0.088	0.09	0.094	0.068	0.063	0.17	0.068	
Cadmium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chromium, Total	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Cyanide, Total	ND	0.022	0.006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Lead	ND	ND	ND	ND	0.011	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.18	
Nickel	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Zinc	ND	0.0054	ND	ND	ND	0.041	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

- Notes:
- In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
  - Volatile organic compounds (VOCs) reported in micrograms per liter (ug/L).
  - Metals reported in milligrams per liter (mg/L).
  - SE = Southeast.
  - ND = Not detected above the method detection limit.
  - NA = Not analyzed.
  - Possible mislabeling of sample occurred in 1988.

**Table 10**  
**Monitoring Well Sample Results**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

Parameter	Date Sampled	Monitoring Well Number MW83AD (SE Area)									
		3/1988	8/1988	7/31/1992	11/8/1995	11/6/1996	6/13/1997	10/15/1998	10/13/1999	10/2/2000	10/31/2001
<b>VOCs (ug/L)</b>											
Acetone		ND	ND	ND	NA	NA	NA	NA	NA	ND	
Bromomethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	
n-Butylbenzene		ND	ND	NA	ND	NA	NA	ND	ND	ND	
2-Butanone		ND	ND	ND	NA	NA	NA	NA	NA	ND	
Carbon Disulfide		ND	ND	ND	NA	NA	NA	ND	ND	ND	
Chloroethane		ND	ND	ND	ND	NA	ND	ND	ND	ND	
1,1-Dichloroethane		ND	ND	0.6	ND	1.5	ND	ND	ND	ND	
1,1-Dichloroethene		ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2-Dichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	
cis-1,2-Dichloroethene		ND	NA	NA	140	88	60	38	33	8.9	
trans-1,2-Dichloroethene		ND	NA	NA	ND	ND	ND	ND	NA	ND	
Total 1,2-Dichloroethene		ND	7.2	10	140	88	60	38	33	8.9	
1,2-Dichloropropane		ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chloroform		ND	ND	ND	ND	ND	ND	ND	ND	ND	
4-methyl-2-Pentanone		ND	ND	ND	NA	NA	NA	NA	ND	ND	
1,1,1-Trichloroethane		ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND	ND	13	ND	
Dibromomethane		ND	ND	NA	ND	NA	NA	NA	ND	ND	
Tetrachloroethene		ND	ND	ND	ND	ND	ND	ND	ND	ND	
Trichloroethene		ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2,4-Trimethylbenzene		ND	ND	NA	ND	NA	NA	NA	ND	ND	
Vinyl Chloride		4	38	3	110	73	54	8.8	35	16	
Benzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	
Toluene		ND	0.9	ND	ND	ND	ND	ND	ND	ND	
Xylenes (total)		ND	ND	ND	ND	ND	ND	ND	ND	ND	
<b>Total VOCs</b>		<b>4</b>	<b>46</b>	<b>14</b>	<b>250</b>	<b>163</b>	<b>114</b>	<b>47</b>	<b>81</b>	<b>25</b>	<b>13</b>
<b>Metals (mg/L)</b>											
Arsenic		NA	NA	ND	0.004	ND	ND	ND	ND	ND	
Barium		NA	NA	0.022	0.25	0.24	0.27	0.17	0.19	0.17	
Cadmium		NA	NA	0.005	ND	ND	ND	ND	ND	ND	
Chromium, Total		NA	NA	ND	ND	ND	ND	ND	ND	ND	
Cyanide, Total		NA	NA	0.07	ND	ND	0.014	ND	ND	ND	
Lead		NA	NA	ND	ND	ND	ND	ND	ND	ND	
Nickel		NA	NA	ND	ND	ND	ND	ND	0.004	ND	
Zinc		NA	NA	ND	0.01	ND	0.02	0.022	0.02	ND	

Notes:

1. In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
2. Volatile organic compounds (VOCs) reported in micrograms per liter (ug/L).
3. Metals reported in milligrams per liter (mg/L).
4. SE = Southeast.
5. ND = Not detected above the method detection limit.
6. NA = Not analyzed.

**Table 10**  
**Monitoring Well Sample Results**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

Parameter	Date Sampled	Monitoring Well Number MW83B (NE Area)						
		3/1988	7/31/1992	6/7/1996	11/6/1996	6/12/1997	10/15/1998	10/2/2000
<b>VOCs (ug/L)</b>								
Acetone	270	ND	ND	NA	NA	ND	ND	ND
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	ND	NA	ND	NA	NA	ND	ND	ND
2-Butanone	23	ND	ND	NA	NA	NA	NA	NA
Carbon Disulfide	ND	NA	ND	NA	NA	ND	ND	ND
Chloroethane	ND	ND	ND	NA	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	NA	ND	ND	ND	ND	ND	ND
Total 1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND
4-methyl-2-Pentanone	ND	ND	ND	NA	NA	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	ND	NA	ND	NA	NA	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	ND	NA	ND	NA	NA	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (total)	ND	ND	ND	ND	ND	ND	ND	ND
<b>Total VOCs</b>	<b>293</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>
<b>Metals (mg/L)</b>								
Arsenic	ND	ND	0.003	0.0031	0.0027	ND	0.0054	ND
Barium	ND	ND	0.16	0.22	0.19	0.16	0.26	0.18
Cadmium	ND	0.005	ND	ND	ND	ND	ND	ND
Chromium, Total	ND	ND	ND	ND	ND	ND	ND	ND
Cyanide, Total	ND	0.019	ND	ND	ND	ND	ND	ND
Lead	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ND	ND	0.02	0.021	ND	ND	ND	ND
Zinc	ND	ND	0.1	0.081	0.029	ND	ND	ND

Notes:

- In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
- Volatile organic compounds (VOCs) reported in micrograms per liter (ug/L).
- Metals reported in milligrams per liter (mg/L).
- NE = Northeast.
- ND = Not detected above the method detection limit.
- NA = Not analyzed.

**Table 10**  
**Monitoring Well Sample Results**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

Parameter	Date Sampled	Monitoring Well Number		
		MW83DS (Formerly GW83E SE Area)	8/1988	11/1/2001
<b>VOCs (ug/L)</b>				
Acetone		ND	ND	ND
Bromomethane		ND	ND	ND
n-Butylbenzene		ND	ND	ND
2-Butanone		ND	NA	NA
Carbon Disulfide		ND	ND	ND
Chloroethane		ND	ND	ND
1,1-Dichloroethane		ND	1.1	ND
1,1-Dichloroethene		ND	ND	ND
1,2-Dichloroethane		ND	ND	ND
cis-1,2-Dichloroethene		ND	191	350
trans-1,2-Dichloroethene		ND	1.1	ND
Total 1,2-Dichloroethene		ND	192	350
1,2-Dichloropropane		ND	ND	ND
Chloroform		ND	ND	ND
4-methyl-2-Pentanone		ND	ND	ND
1,1,1-Trichloroethane		ND	ND	ND
1,1,2-Trichloroethane		ND	ND	ND
Dibromomethane		ND	ND	ND
Tetrachloroethene		ND	ND	ND
Trichloroethene		ND	ND	ND
1,2,4-Trimethylbenzene		ND	ND	ND
Vinyl Chloride		ND	16	120
Benzene		ND	ND	ND
Ethylbenzene		ND	ND	ND
Toluene		ND	ND	ND
Xylenes (total)		ND	ND	ND
<b>Total VOCs</b>		<b>ND</b>	<b>209</b>	<b>470</b>
<b>Metals (mg/L)</b>				
Arsenic		0.003	ND	ND
Barium		0.211	0.077	0.12
Cadmium		ND	ND	ND
Chromium, Total		ND	ND	ND
Cyanide, Total		ND	NA	NA
Lead		ND	ND	0.16
Nickel		ND	ND	ND
Zinc		ND	0.062	ND

**Notes:**

1. In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
2. Volatile organic compounds (VOCs) reported in micrograms per liter (ug/L).
3. Metals reported in milligrams per liter (mg/L).
4. SE = Southeast.
5. ND = Not detected above the method detection limit.
6. NA = Not analyzed.

**Table 10**  
**Monitoring Well Sample Results**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

Parameter	Monitoring Well Number	
	MW83DD (Formerly GW83D SE Area)	8/1988
Date Sampled	11/6/2001	
<b>VOCs (ug/L)</b>		
Acetone	ND	ND
Bromomethane	ND	ND
n-Butylbenzene	ND	ND
2-Butanone	ND	NA
Carbon Disulfide	ND	ND
Chloroethane	ND	ND
1,1-Dichloroethane	ND	ND
1,1-Dichloroethene	ND	ND
1,2-Dichloroethane	ND	ND
cis-1,2-Dichloroethene	ND	ND
trans-1,2-Dichloroethene	ND	ND
Total 1,2-Dichloroethene	ND	ND
1,2-Dichloropropane	ND	ND
Chloroform	ND	ND
4-methyl-2-Pentanone	ND	ND
1,1,1-Trichloroethane	ND	ND
1,1,2-Trichloroethane	ND	ND
Dibromomethane	ND	ND
Tetrachloroethylene	ND	ND
Trichloroethylene	ND	ND
1,2,4-Trimethylbenzene	ND	ND
Vinyl Chloride	ND	ND
Benzene	ND	ND
Ethylbenzene	ND	ND
Toluene	ND	ND
Xylenes (total)	ND	ND
Total VOCs	ND	ND
<b>Metals (mg/L)</b>		
Arsenic	0.057	ND
Barium	0.009	0.05
Cadmium	ND	ND
Chromium, Total	ND	ND
Cyanide, Total	0.022	NA
Lead	0.0023	ND
Nickel	ND	ND
Zinc	0.004	ND

Notes:

1. In samples where total 1,2-dichloroethene has been listed, cis-1,2-dichloroethene is included in that total.
2. Volatile organic compounds (VOCs) reported in micrograms per liter (ug/L).
3. Metals reported in milligrams per liter (mg/L).
4. SE = Southeast.
5. ND = Not detected above the method detection limit.
6. NA = Not analyzed.

**Table 11**  
**Summary of Recovery Well Construction Details**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

Recovery Well Number	TOIC Elevations 2001	Surface Elevations (AMSL)	Total Depth (bgs)	Well Diameter (inches)	Screen Length (feet)	Sump Length (feet)	Bottom Screen Elevation (AMSL) (approx.)	Top Screen Elevation (AMSL) (approx.)	Slot Size (inches)	General Location	Installation Date
RW-1	818.45	819.52	32.00	6	20	5	792.52	812.52	0.02	AST Area	Oct. 94
RW-2	824.29	825.07	40.00	6	20	5	790.07	810.07	0.02	AST Area	Oct. 94
RW-3	822.71	823.36	32.00	6	20	5	796.36	816.36	0.02	AST Area	Oct. 94
RW-4	833.24	833.53	48.30	6	20	5	790.23	810.23	0.02	RW4 Area	Oct. 94
RW-5	823.94	824.20	40.00	6	30	0	784.20	814.20	0.02	SE Area	Oct. 94
RW-6	820.71	821.62	43.50	6	35	0	778.12	813.12	0.02	SE Area	Oct. 94
RW-7	820.21	821.51	36.00	6	30	0	785.51	815.51	0.02	SE Area	Oct. 94
RW-8	821.86	823.03	41.80	6	35	0	781.23	816.23	0.02	SE Area	Oct. 94
RW-9	821.69	821.88	37.00	6	30	0	784.88	814.88	0.02	SE Area	Oct. 94
RW-10	822.55	824.03	40.30	6	35	0	783.73	818.73	0.02	SE Area	Oct. 94

- Notes:**
1. TOIC = Top of inner well casing. AMSL = Above mean sea level. bgs = Below ground surface.
  2. Depth to groundwater measured in feet below TOIC.
  3. Prior to 2001, TOIC elevations based on Ayres-Lewis-Norris-May, Inc. survey on 10/10/97.
  4. RW = Recovery well. AST = Aboveground Storage Tank. SE = Southeast.
  5. TOIC and surface elevations based on Benchmark Surveying, Inc. survey on 7/2/01 and 10/25/01.
  6. Construction details from As-Built RD drawings (Warzyn, March 1995).

**Table 12**  
**Recovery Well Analytical Results**  
**Detected Volatile Organic Compounds**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

<b>Parameter</b>	<b>Date Sampled</b>	<b>RW1</b>					
		8/27/1996	11/6/1996	6/11/1997	11/18/1997	4/21/1998	11/1/2001
Acetone		NA	NA	NA	NA	ND	ND
Bromomethane		ND	ND	ND	ND	ND	ND
n-Butylbenzene		ND	NA	NA	NA	ND	ND
2-Butanone		NA	NA	NA	NA	NA	NA
Carbon Disulfide		NA	NA	NA	NA	ND	ND
Chloroethane		ND	2.4	2.2	3.7	ND	ND
1,1-Dichloroethane		170	180	110	190	140	103
1,1-Dichloroethene		ND	ND	ND	ND	ND	ND
1,2-Dichloroethane		ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene		240	180	190	230	200	119
trans-1,2-Dichloroethene		ND	1.4	1.4	2.9	ND	1.3
Total 1,2-Dichloroethene		240	181.4	191.4	232.9	200	120.3
1,2-Dichloropropane		ND	ND	ND	ND	ND	ND
Chloroform		ND	ND	ND	ND	ND	ND
4-methyl-2-Pentanone		NA	NA	NA	NA	ND	ND
1,1,1-Trichloroethane		22	23	20	31	19	12.7
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND
Dibromomethane		ND	NA	NA	NA	ND	ND
Tetrachloroethene		ND	ND	ND	ND	ND	ND
Trichloroethene		ND	ND	ND	ND	ND	2.4
1,2,4-Trimethylbenzene		NA	NA	NA	NA	ND	ND
Vinyl Chloride		170	ND	100	140	80	54.8
Benzene		ND	ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	ND	ND
Xylenes (total)		ND	ND	ND	ND	ND	ND

**Notes:**

1. Results from recovery well (RW) are reported in micrograms per liter (ug/L).
2. ND = Not detected above the method detection limit.
3. NA = Not analyzed.
4. No data was collected during the October 1998 sampling event.

**Table 12**  
**Recovery Well Analytical Results**  
**Detected Volatile Organic Compounds**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

Parameter	Date Sampled	RW2					
		8/27/1996	11/6/1996	6/11/1997	11/18/1997	4/21/1998	11/1/2001
Acetone		NA	NA	NA	NA	ND	ND
Bromomethane		ND	ND	ND	ND	ND	ND
n-Butylbenzene		ND	NA	NA	NA	ND	ND
2-Butanone		NA	NA	NA	NA	NA	NA
Carbon Disulfide		NA	NA	NA	NA	ND	ND
Chloroethane		ND	2.6	2.2	ND	ND	ND
1,1-Dichloroethane		8.1	160	110	21	52	18.2
1,1-Dichloroethene		ND	ND	ND	ND	ND	ND
1,2-Dichloroethane		ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene		6.6	150	180	53	78	45
trans-1,2-Dichloroethene		ND	1.6	1.4	ND	ND	1.7
Total 1,2-Dichloroethene		6.6	151.6	181.4	53	78	46.7
1,2-Dichloropropane		ND	ND	ND	ND	ND	ND
Chloroform		ND	ND	ND	ND	ND	ND
4-methyl-2-Pentanone		NA	NA	NA	NA	ND	ND
1,1,1-Trichloroethane		ND	23.0	20.0	ND	6.1	4.4
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND
Dibromomethane		ND	NA	NA	NA	ND	ND
Tetrachloroethene		ND	ND	ND	ND	ND	ND
Trichloroethene		ND	ND	ND	ND	ND	1.2
1,2,4-Trimethylbenzene		NA	NA	NA	NA	ND	ND
Vinyl Chloride		7.7	150	97	19	34	5.3
Benzene		ND	ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	ND	ND
Xylenes (total)		ND	ND	ND	ND	ND	ND

Notes:

1. Results from recovery well (RW) are reported in micrograms per liter (ug/L).
2. ND = Not detected above the method detection limit.
3. NA = Not analyzed.
4. No data was collected during the October 1998 sampling event.

**Table 12**  
**Recovery Well Analytical Results**  
**Detected Volatile Organic Compounds**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

Parameter	Date Sampled	RW3							
		8/27/1996	11/6/1996	6/12/1997	11/18/1997	4/21/1998	8/18/1999	10/19/1999	11/1/2001
Acetone		NA	NA	NA	NA	ND	ND	ND	ND
Bromomethane		ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene		ND	NA	NA	NA	ND	ND	ND	ND
2-Butanone		NA	NA	NA	NA	NA	ND	NA	NA
Carbon Disulfide		NA	NA	NA	NA	ND	ND	ND	ND
Chloroethane		ND	NA	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane		ND	3.1	2.7	4.9	ND	ND	ND	9.4
1,1-Dichloroethene		ND	ND	ND	1.9	ND	ND	ND	ND
1,2-Dichloroethane		ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	390	330	270	690	340	150	200	349	
trans-1,2-Dichloroethene	10	5.9	6.9	15	11	ND	5.1	8.6	
Total 1,2-Dichloroethene	400	335.9	276.9	705	351	150	205	357.6	
1,2-Dichloropropane		ND	ND	ND	ND	ND	ND	ND	ND
Chloroform		ND	ND	ND	ND	ND	ND	ND	ND
4-methyl-2-Pentanone		NA	NA	NA	NA	ND	ND	ND	ND
1,1,1-Trichloroethane		ND	ND	ND	1.7	ND	ND	ND	4.4
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane		ND	NA	NA	NA	ND	ND	ND	ND
Tetrachloroethene		ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	150	130	120	240	330	96	140	99.1	
1,2,4-Trimethylbenzene	NA	NA	NA	NA	ND	ND	ND	ND	ND
Vinyl Chloride	43	40	28	50	3.5	11.0	15.0	30.4	
Benzene		ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (total)		ND	ND	ND	ND	ND	ND	ND	ND

- Notes:**
1. Results from recovery well (RW) are reported in micrograms per liter (ug/L).
  2. ND = Not detected above the method detection limit.
  3. NA = Not analyzed.
  4. No data was collected during the October 1998 sampling event.

**Table 12**  
**Recovery Well Analytical Results**  
**Detected Volatile Organic Compounds**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

Parameter	Date Sampled	RW4					
		8/27/1996	11/6/1996	6/12/1997	11/18/1997	4/21/1998	11/2/2001
Acetone		NA	NA	NA	NA	ND	ND
Bromomethane		ND	ND	ND	ND	ND	ND
n-Butylbenzene		ND	NA	NA	NA	ND	ND
2-Butanone		NA	NA	NA	NA	NA	NA
Carbon Disulfide		NA	NA	NA	NA	ND	ND
Chloroethane		ND	NA	ND	ND	ND	ND
1,1-Dichloroethane		ND	2.9	1.5	2.6	ND	13.3
1,1-Dichloroethene		ND	ND	ND	ND	ND	2.3
1,2-Dichloroethane		ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene		430	450	290	390	180	1,580
trans-1,2-Dichloroethene		27	26	18	24	12	23.2
Total 1,2-Dichloroethene		457	476	308	414	192	1603
1,2-Dichloropropane		ND	ND	ND	ND	ND	ND
Chloroform		ND	ND	ND	ND	ND	ND
4-methyl-2-Pentanone		NA	NA	NA	NA	ND	ND
1,1,1-Trichloroethane		ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND
Dibromomethane		ND	NA	NA	NA	ND	ND
Tetrachloroethene		ND	ND	ND	ND	ND	ND
Trichloroethene		ND	ND	ND	ND	ND	258
1,2,4-Trimethylbenzene		NA	NA	NA	NA	ND	ND
Vinyl Chloride		ND	ND	ND	ND	ND	142
Benzene		ND	ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	ND	ND
Xylenes (total)		ND	ND	ND	ND	ND	ND

- Notes:**
1. Results from recovery well (RW) are reported in micrograms per liter (ug/L).
  2. ND = Not detected above the method detection limit.
  3. NA = Not analyzed.
  4. No data was collected during the October 1998 sampling event.

**Table 12**  
**Recovery Well Analytical Results**  
**Detected Volatile Organic Compounds**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

<b>Parameter</b>	<b>Date Sampled</b>	<b>RW5</b>						
		8/27/1996	11/6/1996	6/12/1997	11/18/1997	4/21/1998	11/2/2001	4/23/2002
Acetone		NA	NA	NA	NA	ND	ND	ND
Bromomethane		ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene		ND	NA	NA	NA	ND	ND	ND
2-Butanone		NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide		NA	NA	NA	NA	ND	ND	ND
Chloroethane		ND	NA	ND	ND	ND	ND	ND
1,1-Dichloroethane		ND	ND	1.1	4.0	ND	7.1	4.7
1,1-Dichloroethene		ND	ND	ND	ND	ND	2.9	2.2
1,2-Dichloroethane		ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	330	330	910	1,900	4,000	5,310	3,520	
trans-1,2-Dichloroethene	20	26	53	140	260	211	143	
Total 1,2-Dichloroethene	350	356	963	2,040	4,260	5,521	3,663	
1,2-Dichloropropane		ND	ND	ND	ND	ND	ND	ND
Chloroform		ND	ND	ND	ND	ND	ND	ND
4-methyl-2-Pentanone		NA	NA	NA	NA	ND	ND	ND
1,1,1-Trichloroethane		ND	ND	ND	ND	ND	4.0	3.1
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND	ND
Dibromomethane		ND	NA	NA	NA	ND	ND	ND
Tetrachloroethene		ND	ND	ND	ND	ND	ND	ND
Trichloroethene		ND	1.8	ND	15	130	348	219
1,2,4-Trimethylbenzene		NA	NA	NA	NA	ND	ND	ND
Vinyl Chloride	100	200	520	1,600	1,100	393	436	
Benzene		ND	ND	ND	ND	ND	4.0	3.8
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	ND	ND	ND
Xylenes (total)		ND	ND	ND	ND	ND	ND	ND

**Notes:**

1. Results from recovery well (RW) are reported in micrograms per liter (ug/L).
2. ND = Not detected above the method detection limit.
3. NA = Not analyzed.
4. No data was collected during the October 1998 sampling event.

**Table 12**  
**Recovery Well Analytical Results**  
**Detected Volatile Organic Compounds**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

Parameter	Date Sampled	RW6					
		8/27/1996	11/6/1996	6/12/1997	11/18/97	4/21/1998	11/2/2001
Acetone		NA	NA	NA	NA	ND	ND
Bromomethane		ND	ND	ND	ND	ND	ND
n-Butylbenzene		ND	NA	NA	NA	ND	ND
2-Butanone		NA	NA	NA	NA	NA	NA
Carbon Disulfide		NA	NA	NA	NA	ND	ND
Chloroethane		ND	NA	7.5	ND	ND	ND
1,1-Dichloroethane		ND	ND	21	ND	ND	ND
1,1-Dichloroethene		ND	ND	3.6	ND	ND	ND
1,2-Dichloroethane		ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene		ND	ND	4,500	1.0	5.7	43.1
trans-1,2-Dichloroethene		ND	ND	53	ND	ND	ND
Total 1,2-Dichloroethene		ND	ND	4,553	1.0	5.7	43.1
1,2-Dichloropropane		ND	ND	ND	ND	ND	ND
Chloroform		ND	ND	ND	ND	ND	ND
4-methyl-2-Pentanone		NA	NA	NA	NA	ND	ND
1,1,1-Trichloroethane		ND	ND	3.1	ND	ND	ND
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND
Dibromomethane		ND	NA	NA	NA	ND	ND
Tetrachloroethene		ND	ND	ND	ND	ND	ND
Trichloroethene		ND	ND	240	ND	ND	ND
1,2,4-Trimethylbenzene		NA	NA	NA	NA	ND	ND
Vinyl Chloride		ND	ND	780	1.1	ND	112
Benzene		ND	ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	ND	ND
Xylenes (total)		ND	ND	ND	ND	ND	ND

**Notes:**

1. Results from recovery well (RW) are reported in micrograms per liter (ug/L).
2. ND = Not detected above the method detection limit.
3. NA = Not analyzed.
4. No data was collected during the October 1998 sampling event.

**Table 12**  
**Recovery Well Analytical Results**  
**Detected Volatile Organic Compounds**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

Parameter	Date Sampled	RW7					
		8/27/1996	11/6/1996	6/12/1997	11/18/1997	4/21/1998	11/2/2001
Acetone		NA	NA	NA	NA	ND	ND
Bromomethane		ND	ND	ND	ND	ND	ND
n-Butylbenzene		ND	NA	NA	NA	ND	ND
2-Butanone		NA	NA	NA	NA	NA	NA
Carbon Disulfide		NA	NA	NA	NA	ND	ND
Chloroethane		ND	NA	ND	ND	ND	ND
1,1-Dichloroethane		ND	ND	ND	ND	ND	1.7
1,1-Dichloroethene		ND	ND	ND	ND	ND	1.1
1,2-Dichloroethane		ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene		2.4	910	100	520	ND	653
trans-1,2-Dichloroethene		ND	43	2.2	12	ND	7.1
Total 1,2-Dichloroethene		2.4	953	102.2	532.0	ND	660.1
1,2-Dichloropropane		ND	7.4	ND	2.4	ND	ND
Chloroform		ND	ND	ND	ND	ND	ND
4-methyl-2-Pentanone		NA	NA	NA	NA	ND	ND
1,1,1-Trichloroethane		ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND
Dibromomethane		ND	NA	NA	NA	ND	ND
Tetrachloroethene		ND	1.0	ND	ND	ND	ND
Trichloroethene		1.7	290	26	140	43	101
1,2,4-Trimethylbenzene		NA	NA	NA	NA	ND	ND
Vinyl Chloride		ND	ND	ND	7.9	3.3	174
Benzene		ND	ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	ND	ND
Xylenes (total)		ND	ND	ND	ND	ND	ND

**Notes:**

1. Results from recovery well (RW) are reported in micrograms per liter (ug/L).
2. ND = Not detected above the method detection limit.
3. NA = Not analyzed.
4. No data was collected during the October 1998 sampling event.

**Table 12**  
**Recovery Well Analytical Results**  
**Detected Volatile Organic Compounds**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

<b>Parameter</b>	<b>Date Sampled</b>	<b>RW8</b>					
		8/27/1996	11/6/1996	6/12/1997	11/18/1997	4/21/1998	11/2/2001
Acetone		NA	NA	NA	NA	ND	ND
Bromomethane		ND	ND	ND	ND	ND	ND
n-Butylbenzene		ND	NA	NA	NA	ND	ND
2-Butanone		NA	NA	NA	NA	NA	NA
Carbon Disulfide		NA	NA	NA	NA	ND	ND
Chloroethane		ND	NA	3.6	2.1	ND	ND
1,1-Dichloroethane		ND	11	19	29	ND	110
1,1-Dichloroethene		ND	3.1	5.6	5.8	ND	30.6
1,2-Dichloroethane		ND	1400	ND	ND	ND	ND
cis-1,2-Dichloroethene		3,000	1,434	2,800	4,700	5,500	18,500
trans-1,2-Dichloroethene		66	ND	42	44	ND	144
Total 1,2-Dichloroethene		3066	1434	2842	4744	5500	18,644
1,2-Dichloropropane		ND	ND	ND	ND	ND	ND
Chloroform		ND	ND	ND	ND	ND	ND
4-methyl-2-Pentanone		NA	NA	NA	NA	ND	ND
1,1,1-Trichloroethane		ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND
Dibromomethane		ND	NA	NA	NA	ND	ND
Tetrachloroethene		ND	ND	ND	ND	ND	ND
Trichloroethene		140	98	160	180	270	5,250
1,2,4-Trimethylbenzene		NA	NA	NA	NA	ND	ND
Vinyl Chloride		650	130	310	160	ND	802
Benzene		ND	ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	ND	ND
Xylenes (total)		ND	ND	ND	ND	ND	ND

**Notes:**

1. Results from recovery well (RW) are reported in micrograms per liter (ug/L).
2. ND = Not detected above the method detection limit.
3. NA = Not analyzed.
4. No data was collected during the October 1998 sampling event.

**Table 12**  
**Recovery Well Analytical Results**  
**Detected Volatile Organic Compounds**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

Parameter	Date Sampled	RW9					
		8/27/1996	11/6/1996	6/12/1997	11/18/1997	4/21/1998	11/2/2001
Acetone		NA	NA	NA	NA	ND	ND
Bromomethane		ND	ND	ND	ND	ND	ND
n-Butylbenzene		ND	NA	NA	NA	ND	ND
2-Butanone		NA	NA	NA	NA	NA	NA
Carbon Disulfide		NA	NA	NA	NA	ND	ND
Chloroethane		ND	NA	3.3	ND	ND	ND
1,1-Dichloroethane		1.3	3.3	1.2	1.9	ND	3.0
1,1-Dichloroethene		ND	3.1	5.7	4.4	ND	6.3
1,2-Dichloroethane		ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene		340	2,100	2,700	3,000	5,300	3,880
trans-1,2-Dichloroethene		3	19	32	17	61	32.6
Total 1,2-Dichloroethene		343	2119	2732	3017	5361	3,912
1,2-Dichloropropane		ND	ND	ND	ND	ND	1.8
Chloroform		ND	ND	ND	ND	ND	ND
4-methyl-2-Pentanone		NA	NA	NA	NA	ND	ND
1,1,1-Trichloroethane		ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND
Dibromomethane		ND	NA	NA	NA	ND	ND
Tetrachloroethene		ND	ND	3.1	ND	ND	ND
Trichloroethene		23	230	480	300	510	565
1,2,4-Trimethylbenzene		NA	NA	NA	NA	ND	ND
Vinyl Chloride		5.1	220	410	400	ND	306
Benzene		ND	ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	ND	ND
Xylenes (total)		ND	ND	ND	ND	ND	ND

Notes:

1. Results from recovery well (RW) are reported in micrograms per liter (ug/L).
2. ND = Not detected above the method detection limit.
3. NA = Not analyzed.
4. No data was collected during the October 1998 sampling event.

**Table 12**  
**Recovery Well Analytical Results**  
**Detected Volatile Organic Compounds**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

<b>Parameter</b>	<b>Date Sampled</b>	<b>RW10</b>					
		8/27/1996	11/6/1996	6/12/1997	11/18/1997	4/21/1998	11/2/2001
Acetone		NA	NA	NA	NA	ND	ND
Bromomethane		2	ND	ND	ND	ND	ND
n-Butylbenzene		ND	NA	NA	NA	ND	ND
2-Butanone		NA	NA	NA	NA	NA	NA
Carbon Disulfide		NA	NA	NA	NA	ND	ND
Chloroethane		10	NA	NA	17	ND	17
1,1-Dichloroethane		68	8	55	71	74	82
1,1-Dichloroethene		5	ND	7	8	ND	7
1,2-Dichloroethane		ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene		6,100	1,100	8,600	48,000	11,000	11,000
trans-1,2-Dichloroethene		89	28	58	77	84	89
Total 1,2-Dichloroethene		6,189	1,128	8,658	48,077	11,084	11,089
1,2-Dichloropropane		ND	ND	ND	1	ND	2
Chloroform		ND	ND	ND	ND	ND	ND
4-methyl-2-Pentanone		NA	NA	NA	NA	ND	ND
1,1,1-Trichloroethane		ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane		ND	ND	ND	ND	ND	ND
Dibromomethane		ND	NA	NA	NA	ND	ND
Tetrachloroethene		1	ND	1	ND	ND	ND
Trichloroethene		420	53	500	440	640	308
1,2,4-Trimethylbenzene		NA	NA	NA	NA	ND	ND
Vinyl Chloride		1,400	290	1,900	1,200	1,400	548
Benzene		ND	ND	ND	ND	ND	7
Ethylbenzene		ND	ND	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	ND	ND
Xylenes (total)		ND	ND	ND	ND	ND	ND

**Notes:**

1. Results from recovery well (RW) are reported in micrograms per liter (ug/L).
2. ND = Not detected above the method detection limit.
3. NA = Not analyzed.
4. No data was collected during the October 1998 sampling event.

**Table 13**  
**Summary of Treatment System Air Sampling**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

<b>Contaminant</b>	<b>IN 23-Apr-99</b>	<b>EFF 23-Apr-99</b>	<b>IN 17-May-99</b>	<b>EFF 17-May-99</b>	<b>IN 24-Jun-99</b>	<b>EFF 24-Jun-99</b>
Tetrachloroethene	<14	17	110	52	46	6
Trichloroethene	220	300	570	240	860	120
1,1-Dichloroethene	<14	<13	<18	<12	<17	6
cis-1,2-Dichloroethene	1,600	1,500	2,200	1,000	2,300	390
trans-1,2-Dichloroethene	50	58	52	36	140	35
Vinyl Chloride	360	280	220	120	240	35
1,1,1-Trichloroethane	36	36	83	25	43	8
1,1-Dichloroethane	26	25	29	13	45	9
Toluene	20	<13	<18	<12	<17	3
<b>Cumulative Risk</b>	<b>7.52E-07</b>	<b>5.93E-07</b>	<b>4.98E-07</b>	<b>2.67E-07</b>	<b>5.45E-07</b>	<b>7.90E-08</b>
<b>Contaminant</b>	<b>EFF 13-Jul-99</b>	<b>EFF 6-Aug-99</b>	<b>EFF 1-Sep-99</b>	<b>EFF 14-Oct-99</b>	<b>EFF 23-Nov-99</b>	<b>EFF 13-Dec-99</b>
Tetrachloroethene	51	27	25	63	16	38
Trichloroethene	440	810	390	1,700	390	520
1,1-Dichloroethene	<7.8	<9.2	4	<9.2	<14	<12
cis-1,2-Dichloroethene	2,200	<9.2	1,600	3,300	1,400	1,500
trans-1,2-Dichloroethene	100	140	120	260	76	95
Vinyl Chloride	340	270	220	180	200	200
1,1,1-Trichloroethane	180	44	200	99	97	66
1,1-Dichloroethane	45	45	60	61	32	32
Toluene	<7.8	<9.2	<2.3	<9.2	<14	<12
<b>Cumulative Risk</b>	<b>7.29E-07</b>	<b>6.01E-07</b>	<b>4.76E-07</b>	<b>4.68E-07</b>	<b>4.33E-07</b>	<b>4.44E-07</b>

- Notes:**
1. All results reported in parts per billion (volume/volume).
  2. IN = Influent. EFF = Effluent sample.
  3. NA = Not analyzed.
  4. Results indicated for primary detected constituents.
  5. Air treatment system discontinued on June 24, 1999.
  6. Cumulative Risk calculation indicated on Table 14.

**Table 13**  
**Summary of Treatment System Air Sampling**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

<b>Contaminant</b>	<b>EFF 3-Jan-00</b>	<b>EFF 7-Feb-00</b>	<b>EFF 15-Mar-00</b>	<b>EFF 25-Apr-00</b>	<b>EFF 24-May-00</b>	<b>EFF 6-Jun-00</b>
Tetrachloroethene	57	<8.3	88	<21	110	30
Trichloroethene	440	220	400	300	440	380
1,1-Dichloroethene	<18	<8.3	<9.0	<3.1	<12	2
cis-1,2-Dichloroethene	1,100	740	1,200	2,300	1,000	1,800
trans-1,2-Dichloroethene	68	55	46	83	71	85
Vinyl Chloride	94	91	61	260	130	190
1,1,1-Trichloroethane	110	29	89	47	150	110
1,1-Dichloroethane	29	17	25	31	30	27
Toluene	<18	<8.3	<9.0	<3.1	<12	<2.0
<b>Cumulative Risk</b>	<b>2.25E-07</b>	<b>2.00E-07</b>	<b>1.60E-07</b>	<b>5.52E-07</b>	<b>3.07E-07</b>	<b>4.14E-07</b>
<b>Contaminant</b>	<b>EFF 25-Jul-00</b>	<b>EFF 4-Aug-00</b>	<b>EFF 5-Sep-00</b>	<b>EFF 6-Oct-00</b>	<b>EFF 7-Nov-00</b>	<b>EFF 21-Dec-00</b>
Tetrachloroethene	31	56	22	52	110	38
Trichloroethene	290	840	540	920	840	760
1,1-Dichloroethene	<9.7	<12	<12	<18	<10	<9.3
cis-1,2-Dichloroethene	1,400	2,200	2,100	2,200	1,900	1,900
trans-1,2-Dichloroethene	39	100	140	160	97	100
Vinyl Chloride	190	230	210	130	170	190
1,1,1-Trichloroethane	80	59	80	93	73	50
1,1-Dichloroethane	21	30	34	49	36	30
Toluene	<9.7	<12	<12	<18	<10	<9.3
<b>Cumulative Risk</b>	<b>4.10E-07</b>	<b>5.25E-07</b>	<b>4.63E-07</b>	<b>3.23E-07</b>	<b>4.10E-07</b>	<b>4.36E-07</b>

- Notes:
1. All results reported in parts per billion (volume/volume).
  2. EFF = Effluent sample.
  3. NA = Not analyzed.
  4. Results indicated for primary detected constituents.
  5. Air treatment system discontinued on June 24, 1999.
  6. Cumulative Risk calculation indicated on Table 14.

**Table 13**  
**Summary of Treatment System Air Sampling**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

<b>Contaminant</b>	<b>EFF 30-Jan-01</b>	<b>EFF 26-Feb-01</b>	<b>EFF 21-Mar-01</b>	<b>EFF 23-Apr-01</b>	<b>EFF 21-May-01</b>	<b>EFF 13-Jun-01</b>
Tetrachloroethene	38	<140	34	<140	<150	<150
Trichloroethene	630	260	340	160	<150	430
1,1-Dichloroethene	<9.2	<140	2.1	<140	<150	<150
cis-1,2-Dichloroethene	2,000	1,700	1,300	1,000	630	1,400
trans-1,2-Dichloroethene	49	NA	NA	NA	NA	NA
Vinyl Chloride	270	180	190	160	<150	210
1,1,1-Trichloroethane	53	<140	26	<140	<150	<150
1,1-Dichloroethane	30	<140	18	<140	<150	<150
Toluene	<9.2	<140	4.0	<140	<150	<150
<b>Cumulative Risk</b>	<b>5.93E-07</b>	<b>4.05E-07</b>	<b>4.13E-07</b>	<b>3.58E-07</b>	<b>3.39E-07</b>	<b>4.77E-07</b>
<b>Contaminant</b>	<b>EFF 23-Jul-01</b>	<b>EFF 23-Aug-01</b>	<b>EFF 17-Sep-01</b>	<b>EFF 31-Oct-01</b>	<b>EFF 18-Nov-01</b>	<b>EFF 28-Dec-01</b>
Tetrachloroethene	<140	<140	<140	<140	<100	<130
Trichloroethene	140	280	280	410	460	300
1,1-Dichloroethene	<140	<140	<140	<140	<100	<130
cis-1,2-Dichloroethene	1,100	600	680	1,500	2,200	1,700
trans-1,2-Dichloroethene	NA	NA	NA	<140	<100	NA
Vinyl Chloride	<140	<140	<140	260	210	210
1,1,1-Trichloroethane	<140	<140	<140	<140	<100	<130
1,1-Dichloroethane	<140	<140	<140	<140	<100	<130
Toluene	<140	<140	<140	<140	<100	<130
<b>Cumulative Risk</b>	<b>3.16E-07</b>	<b>3.24E-07</b>	<b>3.24E-07</b>	<b>5.77E-07</b>	<b>4.71E-07</b>	<b>4.67E-07</b>

- Notes:**
1. All results reported in parts per billion (volume/volume).
  2. EFF = Effluent sample.
  3. NA = Not analyzed.
  4. Results indicated for primary detected constituents.
  5. Air treatment system discontinued on June 24, 1999.
  6. Cumulative Risk calculation indicated on Table 14.

**Table 13**  
**Summary of Treatment System Air Sampling**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

<b>Contaminant</b>	<b>EFF 18-Jan-02</b>	<b>EFF 7-Feb-02</b>	<b>EFF 21-Mar-02</b>	<b>EFF 23-Apr-02</b>	<b>EFF 23-May-02</b>	<b>EFF 18-Jun-02</b>
Tetrachloroethene	<130	<130	<140	7.8	<140	<140
Trichloroethene	280	530	180	29	160	290
1,1-Dichloroethene	<130	<130	<140	<0.69	<140	<140
cis-1,2-Dichloroethene	1,600	2,800	900	37	800	1,200
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA
Vinyl Chloride	280	500	160	1.0	150	220
1,1,1-Trichloroethane	<130	<130	<140	42	<140	<140
1,1-Dichloroethane	<130	<130	<140	3.5	<140	<140
Toluene	<130	<130	<140	<0.69	<140	<140
<b>Cumulative Risk</b>	<b>6.09E-07</b>	<b>1.07E-06</b>	<b>3.59E-07</b>	<b>4.79E-09</b>	<b>3.38E-07</b>	<b>4.88E-07</b>

- Notes:**
1. All results reported in parts per billion (volume/volume).
  2. EFF = Effluent sample.
  3. NA = Not analyzed.
  4. Results indicated for primary detected constituents.
  5. Air treatment system discontinued on June 24, 1999.
  6. Cumulative Risk calculation indicated on Table 14.

**Table 14**  
**Summary of Air Dispersion Modeling**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

Scenario No.	Description	Input / Output	Chemicals									Cumulative Cancer Risk
			Tetrachloroethene Carcinogen	Trichloroethene Carcinogen	1,1-Dichloroethene Non-Carcinogen	cis-1,2-Dichloroethene Non-Carcinogen	trans-1,2-Dichloroethene Non-Carcinogen	Vinyl Chloride Carcinogen	1,1,1-Trichloroethane Non-Carcinogen	1,1-Dichloroethane Carcinogen	Toluene Non-Carcinogen	
93	IN	(ppb)	46	860	17	2300	140	240	43	45	17	
	24-Jun-99	(g/s)	0.0003	0.0048	0.0001	0.0129	0.0008	0.0013	0.0002	0.0003	0.0001	
		Max.Conc.	0.001	0.023	0.000	0.060	0.004	0.006	0.001	0.001	0.000	
		ECR	7.14E-09	4.52E-08				4.92E-07		1.93E-11		5.45E-07
94	EFF	(ppb)	6	120	6	390	35	35	8	9	3	
	24-Jun-99	(g/s)	0.0000	0.0007	0.0000	0.0022	0.0002	0.0002	0.0000	0.0001	0.0000	
		Max.Conc.	0.000	0.003	0.000	0.010	0.001	0.001	0.000	0.000	0.000	
		ECR	9.31E-10	6.31E-09				7.18E-08		3.86E-12		7.90E-08
95	EFF	(ppb)	51	440	8	2200	100	340	180	45	8	
	13-Jul-99	(g/s)	0.0003	0.0025	0.0000	0.0123	0.0006	0.0019	0.0010	0.0003	0.0000	
		Max.Conc.	0.001	0.012	0.000	0.058	0.003	0.009	0.005	0.001	0.000	
		ECR	7.91E-09	2.31E-08				6.97E-07		1.93E-11		7.29E-07
96	EFF	(ppb)	27	810	45	9	140	270	44	45	9	
	6-Aug-99	(g/s)	0.0002	0.0045	0.0003	0.0001	0.0008	0.0015	0.0002	0.0003	0.0001	
		Max.Conc.	0.001	0.021	0.001	0.000	0.004	0.007	0.001	0.001	0.000	
		ECR	4.19E-09	4.26E-08				5.54E-07		1.93E-11		6.01E-07
97	EFF	(ppb)	25	390	4	1600	120	220	200	60	2	
	1-Sep-99	(g/s)	0.0001	0.0022	0.0000	0.0090	0.0007	0.0012	0.0011	0.0003	0.0000	
		Max.Conc.	0.001	0.010	0.000	0.042	0.003	0.006	0.005	0.002	0.000	
		ECR	3.88E-09	2.05E-08				4.51E-07		2.37E-11		4.76E-07
98	EFF	(ppb)	63	1700	9	3300	260	180	99	61	9	
	14-Oct-99	(g/s)	0.0004	0.0095	0.0001	0.0185	0.0015	0.0010	0.0006	0.0003	0.0001	
		Max.Conc.	0.002	0.045	0.000	0.087	0.007	0.005	0.003	0.002	0.000	
		ECR	9.78E-09	8.94E-08				3.69E-07		2.62E-11		4.68E-07
99	EFF	(ppb)	16	390	14	1400	76	200	97	32	14	
	22-Nov-99	(g/s)	0.0001	0.0022	0.0001	0.0078	0.0004	0.0011	0.0005	0.0002	0.0001	
		Max.Conc.	0.000	0.010	0.000	0.037	0.002	0.005	0.003	0.001	0.000	
		ECR	2.48E-09	2.05E-08				4.10E-07		1.37E-11		4.33E-07
100	EFF	(ppb)	38	520	14	1500	95	200	66	32	14	
	13-Dec-99	(g/s)	0.0002	0.0029	0.0001	0.0084	0.0005	0.0011	0.0004	0.0002	0.0001	
		Max.Conc.	0.001	0.014	0.000	0.039	0.002	0.005	0.002	0.001	0.000	
		ECR	5.90E-09	2.74E-08				4.10E-07		1.37E-11		4.44E-07
101	EFF	(ppb)	57	440	18	1100	68	94	110	29	18	
	3-Jan-00	(g/s)	0.0003	0.0025	0.0001	0.0062	0.0004	0.0005	0.0006	0.0002	0.0001	
		Max.Conc.	0.001	0.012	0.000	0.029	0.002	0.002	0.003	0.001	0.000	
		ECR	8.84E-09	2.31E-08				1.93E-07		1.24E-11		2.25E-07
102	EFF	(ppb)	8	220	8	740	55	91	29	17	8	
	7-Feb-00	(g/s)	0.0000	0.0012	0.0000	0.0041	0.0003	0.0005	0.0002	0.0001	0.0000	
		Max.Conc.	0.000	0.006	0.000	0.019	0.001	0.002	0.001	0.000	0.000	
		ECR	1.29E-09	1.16E-08				1.87E-07		7.29E-12		2.00E-07

**Table 14**  
**Summary of Air Dispersion Modeling**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

Scenario No.	Description	Input / Output	Chemicals									Cumulative Cancer Risk
			Tetrachloroethene Carcinogen	Trichloroethene Carcinogen	1,1-Dichloroethene Non-Carcinogen	cis-1,2-Dichloroethene Non-Carcinogen	trans-1,2-Dichloroethene Non-Carcinogen	Vinyl Chloride Carcinogen	1,1,1-Trichloroethane Non-Carcinogen	1,1-Dichloroethane Carcinogen	Toluene Non-Carcinogen	
103	EFF	(ppb)	88	400	9	1200	46	61	89	25	9	
	15-Mar-00	(g/s)	0.0005	0.0022	0.0001	0.0067	0.0003	0.0003	0.0005	0.0001	0.0001	
		Max. Conc.	0.002	0.011	0.000	0.032	0.001	0.002	0.002	0.001	0.000	
		ECR	1.37E-08	2.10E-08				1.25E-07		1.07E-11		1.60E-07
104	EFF	(ppb)	21	300	3	2300	83	260	47	31	3	
	25-Apr-00	(g/s)	0.0001	0.0017	0.0000	0.0129	0.0005	0.0015	0.0003	0.0002	0.0000	
		Max. Conc.	0.001	0.008	0.000	0.060	0.002	0.007	0.001	0.001	0.000	
		ECR	3.26E-09	1.58E-08				5.33E-07		1.33E-11		5.52E-07
105	EFF	(ppb)	110	440	12	1000	71	130	150	30	12	
	24-May-00	(g/s)	0.0006	0.0025	0.0001	0.0056	0.0004	0.0007	0.0008	0.0002	0.0001	
		Max. Conc.	0.003	0.012	0.000	0.026	0.002	0.003	0.004	0.001	0.000	
		ECR	1.71E-08	2.31E-08				2.67E-07		1.29E-11		3.07E-07
106	EFF	(ppb)	30	380	2	1800	85	190	110	27	2	
	6-Jun-00	(g/s)	0.0002	0.0021	0.0000	0.0101	0.0005	0.0011	0.0006	0.0002	0.0000	
		Max. Conc.	0.001	0.010	0.000	0.047	0.002	0.005	0.003	0.001	0.000	
		ECR	4.66E-09	2.00E-08				3.90E-07		1.16E-11		4.14E-07
107	EFF	(ppb)	31	290	10	1400	39	190	80	21	10	
	25-Jul-00	(g/s)	0.0002	0.0016	0.0001	0.0078	0.0002	0.0011	0.0004	0.0001	0.0001	
		Max. Conc.	0.001	0.008	0.000	0.037	0.001	0.005	0.002	0.001	0.000	
		ECR	4.81E-09	1.53E-08				3.90E-07		9.00E-12		4.10E-07
108	EFF	(ppb)	56	840	12	2200	100	230	59	30	12	
	4-Aug-00	(g/s)	0.0003	0.0047	0.0001	0.0123	0.0006	0.0013	0.0003	0.0002	0.0001	
		Max. Conc.	0.001	0.022	0.000	0.058	0.003	0.006	0.002	0.001	0.000	
		ECR	8.69E-09	4.42E-08				4.72E-07		1.29E-11		5.25E-07
109	EFF	(ppb)	22	540	12	2100	140	210	80	34	12	
	5-Sep-00	(g/s)	0.0001	0.0030	0.0001	0.0118	0.0008	0.0012	0.0004	0.0002	0.0001	
		Max. Conc.	0.001	0.014	0.000	0.055	0.004	0.006	0.002	0.001	0.000	
		ECR	3.41E-09	2.84E-08				4.31E-07		1.46E-11		4.63E-07
110	EFF	(ppb)	52	920	18	2200	160	130	93	49	18	
	6-Oct-00	(g/s)	0.0003	0.0052	0.0001	0.0123	0.0009	0.0007	0.0005	0.0003	0.0001	
		Max. Conc.	0.001	0.024	0.000	0.058	0.004	0.003	0.002	0.001	0.000	
		ECR	8.07E-09	4.84E-08				2.67E-07		2.10E-11		3.23E-07
111	EFF	(ppb)	110	840	10	1900	97	170	73	36	10	
	7-Nov-00	(g/s)	0.0006	0.0047	0.0001	0.0106	0.0005	0.0010	0.0004	0.0002	0.0001	
		Max. Conc.	0.003	0.022	0.000	0.050	0.003	0.004	0.002	0.001	0.000	
		ECR	1.71E-08	4.42E-08				3.49E-07		1.54E-11		4.10E-07
112	EFF	(ppb)	38	760	9	1900	100	190	50	30	9	
	21-Dec-00	(g/s)	0.0002	0.0043	0.0001	0.0106	0.0006	0.0011	0.0003	0.0002	0.0001	
		Max. Conc.	0.001	0.020	0.000	0.050	0.003	0.005	0.001	0.001	0.000	
		ECR	5.90E-09	4.00E-08				3.90E-07		1.29E-11		4.36E-07

**Table 14**  
**Summary of Air Dispersion Modeling**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

Scenario No.	Description	Input / Output	Chemicals									Cumulative Cancer Risk
			Tetrachloroethene Carcinogen	Trichloroethene Carcinogen	1,1-Dichloroethene Non-Carcinogen	cis-1,2-Dichloroethene Non-Carcinogen	trans-1,2-Dichloroethene Non-Carcinogen	Vinyl Chloride Carcinogen	1,1,1-Trichloroethane Non-Carcinogen	1,1-Dichloroethane Carcinogen	Toluene Non-Carcinogen	
113	EFF	(ppb)	38	630	9	2000	49	270	53	30	9	
		(g/s)	0.0002	0.0035	0.0001	0.0112	0.0003	0.0015	0.0003	0.0002	0.0001	
		Max.Conc.	0.001	0.017	0.000	0.053	0.001	0.007	0.001	0.001	0.000	
		ECR	5.90E-09	3.31E-08				5.54E-07		1.29E-11		5.93E-07
114	EFF	(ppb)	140	260	140	1700	1	180	140	140	140	
		(g/s)	0.0008	0.0015	0.0008	0.0095	0.0000	0.0010	0.0008	0.0008	0.0008	
		Max.Conc.	0.004	0.007	0.004	0.045	0.000	0.005	0.004	0.004	0.004	
		ECR	2.17E-08	1.37E-08				3.69E-07		6.00E-11		4.05E-07
115	EFF	(ppb)	34	340	2	1300	1	190	26	18	4	
		(g/s)	0.0002	0.0019	0.0000	0.0073	0.0000	0.0011	0.0001	0.0001	0.0000	
		Max.Conc.	0.001	0.009	0.000	0.034	0.000	0.005	0.001	0.000	0.000	
		ECR	5.28E-09	1.79E-08				3.90E-07		7.72E-12		4.13E-07
116	EFF	(ppb)	140	160	140	1000	1	160	140	140	140	
		(g/s)	0.0008	0.0009	0.0008	0.0056	0.0000	0.0009	0.0008	0.0008	0.0008	
		Max.Conc.	0.004	0.004	0.004	0.026	0.000	0.004	0.004	0.004	0.004	
		ECR	2.17E-08	8.42E-09				3.28E-07		6.00E-11		3.58E-07
117	EFF	(ppb)	150	150	150	630	1	150	150	150	150	
		(g/s)	0.0008	0.0008	0.0008	0.0035	0.0000	0.0008	0.0008	0.0008	0.0008	
		Max.Conc.	0.004	0.004	0.004	0.017	0.000	0.004	0.004	0.004	0.004	
		ECR	2.33E-08	7.89E-09				3.08E-07		6.43E-11		3.39E-07
118	EFF	(ppb)	150	430	150	1400	1	210	150	150	150	
		(g/s)	0.0008	0.0024	0.0008	0.0078	0.0000	0.0012	0.0008	0.0008	0.0008	
		Max.Conc.	0.004	0.011	0.004	0.037	0.000	0.006	0.004	0.004	0.004	
		ECR	2.33E-08	2.26E-08				4.31E-07		6.43E-11		4.77E-07
119	EFF	(ppb)	140	140	140	1100	1	140	140	140	140	
		(g/s)	0.0008	0.0008	0.0008	0.0062	0.0000	0.0008	0.0008	0.0008	0.0008	
		Max.Conc.	0.004	0.004	0.004	0.029	0.000	0.004	0.004	0.004	0.004	
		ECR	2.17E-08	7.36E-09				2.87E-07		6.00E-11		3.16E-07
120	EFF	(ppb)	140	280	140	600	1	140	140	140	140	
		(g/s)	0.0008	0.0016	0.0008	0.0034	0.0000	0.0008	0.0008	0.0008	0.0008	
		Max.Conc.	0.004	0.007	0.004	0.016	0.000	0.004	0.004	0.004	0.004	
		ECR	2.17E-08	1.47E-08				2.87E-07		6.00E-11		3.24E-07
121	EFF	(ppb)	140	280	140	680	1	140	140	140	140	
		(g/s)	0.0008	0.0016	0.0008	0.0038	0.0000	0.0008	0.0008	0.0008	0.0008	
		Max.Conc.	0.004	0.007	0.004	0.018	0.000	0.004	0.004	0.004	0.004	
		ECR	2.17E-08	1.47E-08				2.87E-07		6.00E-11		3.24E-07
122	EFF	(ppb)	140	410	140	1500	140	260	140	140	140	
		(g/s)	0.0008	0.0023	0.0008	0.0084	0.0008	0.0015	0.0008	0.0008	0.0008	
		Max.Conc.	0.004	0.011	0.004	0.039	0.004	0.007	0.004	0.004	0.004	
		ECR	2.17E-08	2.16E-08				5.33E-07		6.00E-11		5.77E-07

**Table 14**  
**Summary of Air Dispersion Modeling**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

Scenario No.	Description	Input / Output	Chemicals									Cumulative Cancer Risk
			Tetrachloroethene Carcinogen	Trichloroethene Carcinogen	1,1-Dichloroethene Non-Carcinogen	cis-1,2-Dichloroethene Non-Carcinogen	trans-1,2-Dichloroethene Non-Carcinogen	Vinyl Chloride Carcinogen	1,1,1-Trichloroethane Non-Carcinogen	1,1-Dichloroethane Carcinogen	Toluene Non-Carcinogen	
123	EFF	(ppb)	100	460	100	2200	100	210	100	100	100	
		(g/s)	0.0006	0.0026	0.0006	0.0123	0.0006	0.0012	0.0006	0.0006	0.0006	
		Max.Conc.	0.003	0.012	0.003	0.058	0.003	0.006	0.003	0.003	0.003	
		ECR	1.55E-08	2.42E-08				4.31E-07		4.29E-11		4.71E-07
124	EFF	(ppb)	130	300	130	1700	1	210	130	130	130	
		(g/s)	0.0007	0.0017	0.0007	0.0095	0.0000	0.0012	0.0007	0.0007	0.0007	
		Max.Conc.	0.003	0.008	0.003	0.045	0.000	0.006	0.003	0.003	0.003	
		ECR	2.02E-08	1.58E-08				4.31E-07		5.57E-11		4.67E-07
125	EFF	(ppb)	130	280	130	1600	1	280	130	130	130	
		(g/s)	0.0007	0.0016	0.0007	0.0090	0.0000	0.0016	0.0007	0.0007	0.0007	
		Max.Conc.	0.003	0.007	0.003	0.042	0.000	0.007	0.003	0.003	0.003	
		ECR	2.02E-08	1.47E-08				5.74E-07		5.57E-11		6.09E-07
126	EFF	(ppb)	130	530	130	2800	1	500	130	130	130	
		(g/s)	0.0007	0.0030	0.0007	0.0157	0.0000	0.0028	0.0007	0.0007	0.0007	
		Max.Conc.	0.003	0.014	0.003	0.074	0.000	0.013	0.003	0.003	0.003	
		ECR	2.02E-08	2.79E-08				1.03E-06		5.57E-11		1.07E-06
127	EFF	(ppb)	140	180	140	900	1	160	140	140	140	
		(g/s)	0.0008	0.0010	0.0008	0.0050	0.0000	0.0009	0.0008	0.0008	0.0008	
		Max.Conc.	0.004	0.005	0.004	0.024	0.000	0.004	0.004	0.004	0.004	
		ECR	2.17E-08	9.47E-09				3.28E-07		6.00E-11		3.59E-07
128	EFF	(ppb)	R	29	1	37	1	1	42	4	1	-
		(g/s)	0.0000	0.0002	0.0000	0.0002	0.0000	0.0000	0.0002	0.0000	0.0000	
		Max.Conc.	0.000	0.001	0.000	0.001	0.000	0.000	0.001	0.000	0.000	
		ECR	1.21E-09	1.53E-09				2.05E-09		1.50E-12		4.79E-09
129	EFF	(ppb)	140	160	140	800	1	150	140	140	140	
		(g/s)	0.0008	0.0009	0.0008	0.0045	0.0000	0.0008	0.0008	0.0008	0.0008	
		Max.Conc.	0.004	0.004	0.004	0.021	0.000	0.004	0.004	0.004	0.004	
		ECR	2.17E-08	8.42E-09				3.08E-07		6.00E-11		3.38E-07
130	EFF	(ppb)	140	290	140	1200	1	220	140	140	140	
		(g/s)	0.0008	0.0016	0.0008	0.0067	0.0000	0.0012	0.0008	0.0008	0.0008	
		Max.Conc.	0.004	0.008	0.004	0.032	0.000	0.006	0.004	0.004	0.004	
		ECR	2.17E-08	1.53E-08				4.51E-07		6.00E-11		4.88E-07

- Notes:
1. g/s = Parts per billion (ppb) x 1000 / (22500 x 2.205 x 3600).
  2. Max. Conc. = The maximum predicted concentration (ug/m<sup>3</sup>) from ISCLT2 model run output.
  3. ECR = Excess Cancer Risk = Maximum concentration (Max.Conc.) (micrograms per meters cubed [ug/m<sup>3</sup>]) x Unit Risk Factor.
  4. Unit Risk Factors:
 

Vinyl Chloride -	7.80E-05
1,1-Dichloroethane -	1.63E-08
Trichloroethene -	2.00E-06
Tetrachloroethene -	5.90E-06
  5. g/s = (micrograms per liter [ug/L]) \* 0.1346/MW
  6. Assume MW = 133.
  7. g/s = (ug/L) \* 1.012 x 10<sup>3</sup>.
  8. EFF = Sample collected from treatment system effluent.

**Table 15**  
**Summary of Groundwater Treatment System VOC Influent and Effluent Sampling**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

<b>Contaminant</b>	<b>IN 18-Jan-02</b>	<b>EFF 18-Jan-02</b>	<b>IN 7-Feb-02</b>	<b>EFF 7-Feb-02</b>	<b>IN 21-Mar-02</b>	<b>EFF 21-Mar-02</b>
1,1-Dichloroethane	21	<5	28	<5	11	<5
1,2-Dichloroethane	<5	<5	<5	<5	<5	<5
1,1-Dichloroethene	<5	<5	<5	<5	<5	<5
cis-1,2-Dichloroethene	1,800	93	1,900	180	1,200	79
trans-1,2-Dichloroethene	23	<5	25	<5	14	<5
Trichloroethene	210	<5	240	8	230	<5
Vinyl Chloride	200	<2	260	<2	190	<2
<b>Total VOC Concentration</b>	<b>2,254</b>	<b>93</b>	<b>2,453</b>	<b>188</b>	<b>1,645</b>	<b>79</b>

<b>Contaminant</b>	<b>IN 24-Apr-02</b>	<b>EFF 24-Apr-02</b>	<b>IN 23-May-02</b>	<b>EFF 23-May-02</b>	<b>IN 18-Jun-02</b>	<b>EFF 18-Jun-02</b>
1,1-Dichloroethane	<50	<5	11	<5	<50	<5
1,2-Dichloroethane	<50	<5	<5	<5	<50	<5
1,1-Dichloroethene	<50	<5	<5	<5	<50	<5
cis-1,2-Dichloroethene	770	78	1,300	69	1,300	86
trans-1,2-Dichloroethene	<50	<5	14	<5	<50	<5
Trichloroethene	74	<5	230	<5	320	7
Vinyl Chloride	160	<2	190	<2	180	<2
<b>Total VOC Concentration</b>	<b>1,004</b>	<b>78</b>	<b>1,745</b>	<b>69</b>	<b>1,800</b>	<b>93</b>

**Notes:**

1. All results reported in ug/L (micrograms per liter = parts per billion).
2. VOC = Volatile organic compound. IN = Influent sample. EFF = Effluent sample.
3. Results indicated for primary detected constituents.

**Table 16**  
**Summary of Groundwater Treatment System Effluent Sampling**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

Parameter	Date Sampled	11/18/1997	12/18/1997	1/30/1998	10/13/98	10/13/99	10/6/2000	10/31/2001
<b>Total Metals (mg/L)</b>								
Arsenic		0.015	0.0044	0.005	<0.005	<0.005	<0.028	<0.0050
Beryllium		<0.0050	<0.0050	<0.0050	<0.003	<0.003	<0.003	<0.0010
Cadmium		<0.0050	<0.0050	<0.0050	<0.005	<0.010	<0.005	<0.0010
Chromium		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0020
Copper		0.032	<0.020	1.9	<0.010	<0.005	<0.005	<0.0050
Lead		<0.10	<0.10	<0.10	<0.005	<0.005	<0.005	<0.0010
Mercury		<0.00020	<0.00020	<0.00020	<0.0005	<0.0005	<0.0005	<0.0002
Molybdenum		<0.20	<0.20	<0.20	<0.020	<0.020	<0.020	0.0061
Nickel		<0.050	<0.020	<0.020	<0.020	<0.020	<0.005	0.0091
Potassium		12.0	12.0	9.5	11.0	9.0	9.0	8.6
Selenium		<0.0020	<0.0020	<0.0020	<0.005	<0.005	<0.036	<0.0050
Silver		<0.010	<0.010	<0.010	<0.020	<0.001	<0.005	<0.0005
Zinc		0.054	<0.020	<0.020	<0.020	<0.020	<0.020	<0.050
<b>Inorganics/Wet Chemistry (mg/L)</b>								
Biological Oxygen Demand (BOD)		<2.0	<2.0	<2.0	<5	6	8	<5
Chemical Oxygen Demand (COD)		23	18	21	<10	<10	16	72
Total Cyanide		<0.005	<0.005	<0.0050	<0.005	<0.005	<0.020	<0.005
Oil and Grease		<5.0	<5.0	<5.0	<5.0	6	6	<5
pH		8.3	8.27	7.65	NA	7.2	7.2	NA
Total Phenols		<0.01	<0.01	0.17	<0.010	<0.010	<0.005	0.0093
Total Phosphorus		0.93	0.75	0.96	<0.05	0.48	<0.15	<0.15
Surfactants (MBAs)		Negative	Negative	Negative	Positive	Positive	Negative	0.13
Total Solids		1100	820	850	830	790	820	850
Total Suspended Solids		11	14	19	27	<5	5	9
Nitrate/Nitrite Nitrogen		0.32	0.33	0.44	0.036	0.04	0.033	0.23
Ammonia Nitrogen		0.72	0.15	0.28	1.00	0.80	1.10	1.20
Total Kjeldahl Nitrogen		47	1.21	0.98	1.6	1.09	1.5	1.6
<b>PCBs (ug/L)</b>								
Aroclor 1016		<0.2	<0.2	<0.2	<1.0	<0.7	<1.0	<0.21
Aroclor 1221		<0.2	<0.2	<0.2	<1.0	<0.7	<1.0	<0.21
Aroclor 1232		<0.4	<0.4	<0.4	<1.0	<0.7	<1.0	<0.21
Aroclor 1242		<0.2	<0.2	<0.2	<1.0	<0.7	<1.0	<0.21
Aroclor 1248		<0.2	<0.2	<0.2	<1.0	<0.7	<1.0	<0.21
Aroclor 1254		<0.2	<0.2	<0.2	<1.0	<0.7	<1.0	<0.21
Aroclor 1260		<0.2	<0.2	<0.2	<1.0	<0.7	<1.0	<0.21

Notes: 1. Total metals and inorganic/wet chemistry parameters reported in milligrams per liter (mg/L).  
2. Polychlorinated biphenyls (PCBs) are reported in micrograms per liter (ug/L).

**Table 17**  
**Columbia City Municipal Water Supply Well Results - VOCs and PCBs**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

Parameter	Municipal Well No. 7	Municipal Well No. 8	Municipal Well No. 7	Municipal Well No. 8	Municipal Well No. 7	Municipal Well No. 8	Municipal Well No. 7	Municipal Well No. 8
Date Sampled	10/14/1998	10/14/1998	12/9/1999	12/9/1999	10/3/2000	10/3/2000	10/31/2001	10/31/2001
<b>VOCs (ug/L)</b>								
Benzene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0
Bromodichloromethane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0
Bromoform	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Bromomethane	<10	<10	<10	<10	<10	<10	<1.0	<1.0
Carbon disulfide	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0
Carbon tetrachloride	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0
Chlorobenzene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0
Chlorodibromomethane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0
Chloroethane	<10	<10	<10	<10	<10	<10	<5.0	<5.0
Chloroform	<5.0	<5.0	<20	<20	<20	<20	<1.0	<1.0
Chloromethane	<10	<10	<10	<10	<10	<10	<5.0	<5.0
1,1-Dichloroethane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0
1,2-Dichloroethane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0
1,1-Dichloroethylene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0
cis-1,2-Dichloroethylene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0
trans-1,2-Dichloroethylene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0
1,2-Dichloropropane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0
cis-1,3-Dichloropropene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0
trans-1,3-Dichloropropene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0
Ethylbenzene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0
2-Hexanone	<50	<50	<50	<50	<50	<50	<12.5	<12.5
Methylene chloride	<10	<10	<10	<10	<10	<10	<5.0	<5.0
Methyl-ethyl-ketone	<50	<50	<50	<50	<50	<50	<12.5	<12.5
4-Methyl-2-pentanone	<50	<50	<50	<50	<50	<50	<12.5	<12.5
Styrene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0
Tetrachloroethylene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0
Toluene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0
1,1,1-Trichloroethane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0
1,1,2-Trichloroethane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0
Trichloroethylene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0
Vinyl chloride	<2	<2	<5.0	<5.0	<2.0	<2.0	<1.0	<1.0
Xylenes (total)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0
<b>PCBs (ug/L)</b>								
Aroclor 1016	<1	<1	NA	NA	NA	NA	NA	NA
Aroclor 1221	<1	<1	NA	NA	NA	NA	NA	NA
Aroclor 1232	<1	<1	NA	NA	NA	NA	NA	NA
Aroclor 1242	<1	<1	NA	NA	NA	NA	NA	NA
Aroclor 1248	<1	<1	NA	NA	NA	NA	NA	NA
Aroclor 1254	<1	<1	NA	NA	NA	NA	NA	NA
Aroclor 1260	<1	<1	NA	NA	NA	NA	NA	NA

Notes: 1. Volatile organic compounds (VOCs) and polychlorinated biphenyls (PCBs) reported in micrograms per liter (ug/L).  
2. NA = Not analyzed.

**Table 18**  
**Columbia City Municipal Water Supply Well Results - Metals and Inorganics**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

Parameter	Municipal Well No. 7 Date Sampled 10/14/1998	Municipal Well No. 8 10/14/1998	Municipal Well No. 7 12/9/1999	Municipal Well No. 8 12/9/1999	Municipal Well No. 7 10/3/2000	Municipal Well No. 8 10/3/2000	Municipal Well No. 7 10/31/2001	Municipal Well No. 8 10/31/2001
<b>Total Metals (mg/L)</b>								
Aluminum	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.050	<0.050
Antimony	<0.005	<0.005	<0.005	<0.005	<0.026	<0.026	<0.0010	<0.0010
Arsenic	0.0083	0.0071	0.0091	0.0056	<0.028	<0.028	0.0087	0.0062
Barium	0.15	0.13	0.12	0.11	0.15	0.13	0.161	0.138
Beryllium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010
Cadmium	<0.005	<0.005	<0.010	<0.010	<0.005	<0.005	<0.0010	<0.0010
Calcium	86	83	70	67	87	80	80.2	75.8
Chromium	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0020	<0.0020
Cobalt	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.0050	<0.0050
Copper	<0.010	<0.010	<0.010	<0.010	<0.005	<0.005	<0.0050	<0.0050
Iron	2	1.6	1.6	1.4	1.8	1.5	1.82	1.5
Lead	<0.005	<0.005	<0.005	<0.005	<0.018	<0.018	<0.0010	<0.0010
Magnesium	35	36	28	29	34	34	32.1	32.8
Manganese	0.16	0.14	0.11	0.12	0.12	0.13	0.109	0.114
Mercury	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002
Molybdenum	0.023	0.031	0.025	0.031	<0.020	0.021	<0.020	0.021
Nickel	<0.020	<0.020	<0.020	<0.020	<0.002	<0.0068	<0.0050	<0.0050
Potassium	1.4	1.5	<5.0	<5.0	<5.0	<5.0	1.6	1.8
Selenium	<0.005	<0.005	<0.005	<0.005	<0.036	<0.005	<0.20	<0.20
Silver	<0.020	<0.020	<0.020	<0.020	<0.005	<0.005	<0.0005	<0.0005
Sodium	13	17	11	13	14	17	14	15.8
Thallium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0100	<0.0100
Vanadium	<0.02	<0.02	<0.020	<0.020	<0.02	<0.02	<0.050	<0.050
Zinc	0.024	<0.020	<0.020	<0.020	<0.020	0.04	<0.050	<0.050
<b>Inorganics/Wet Chemistry (mg/L)</b>								
Biological Oxygen Demand (BOD)	<5	<5	NA	NA	NA	NA	NA	NA
Chemical Oxygen Demand (COD)	<10	<10	NA	NA	NA	NA	NA	NA
Total Cyanide	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Oil and Grease	<5	<5	NA	NA	NA	NA	NA	NA
Total Phenols	<0.010	<0.010	NA	NA	NA	NA	NA	NA
Total Phosphorus	<0.05	<0.05	NA	NA	NA	NA	NA	NA
Surfactants (MBAs)	0.10	<0.1	NA	NA	NA	NA	NA	NA
Total Suspended Solids	<5	<5	NA	NA	NA	NA	NA	NA
Nitrite Nitrogen	0.021	0.022	NA	NA	NA	NA	NA	NA
Nitrate Nitrogen	<0.02	<0.02	NA	NA	NA	NA	NA	NA
Ammonia Nitrogen	0.38	0.41	NA	NA	NA	NA	NA	NA
Total Kjeldahl Nitrogen	0.64	0.73	NA	NA	NA	NA	NA	NA

Notes: 1. Total metals and inorganic/wet chemistry parameters reported in milligrams per liter (mg/L).  
2. NA = Not analyzed.

**Table 19**  
**VOC Removal Rates - SVE and Air Stripper Systems**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**

<b>Date/Constituent</b>	SE Area SVE System <sup>(1)</sup>			AST Area - SVE Branch Line G <sup>(2)</sup>			AST Area - SVE Branch Line H <sup>(3)</sup>			Air Stripper <sup>(4)</sup>			<b>Sum of VOCs Removed (lbs/day)</b>
	Air Flow Rate <sup>(5)</sup> (scfm)	Conc. (ppb)	Removal Rate (lbs/day)	Air Flow Rate (scfm)	Conc. (ppb)	Removal Rate (lbs/day)	Air Flow Rate (scfm)	Conc. (ppb)	Removal Rate (lbs/day)	Groundwater Flow Rate (gpm)	IN - EFF Conc. (ug/L)	Removal Rate (lbs/day)	
April 2002 - TCE	2,600	330	0.41	245	22	0.00	245	48	0.01	65	74	0.06	0.48
April 2002 - 1,2-DCE	2,600	370	0.38	245	27	0.00	245	60	0.01	65	692	0.54	0.93
April 2002 - VC	2,600	18	0.01	245	0.92	0.00	245	2.1	0.00	65	160	0.12	0.14
<b>Total</b>			0.80			0.01			0.01			0.72	<b>Total</b> 1.54
Oct/Nov 2001 - TCE	1600	410	0.32	225	150	0.02	225	0	0.00	90	241	0.26	0.59
Oct/Nov 2001 - 1,2-DCE	1600	1500	0.94	225	130	0.01	225	0	0.00	90	1447	1.56	2.52
Oc/Nov 2001 - VC	1600	0	0.00	225	3	0.00	225	0	0.00	90	121	0.13	0.13
<b>Total</b>			1.26			0.03			0.00			1.96	<b>Total</b> 3.24
April 2001 - TCE	1600	140	0.11	105	57	0.00	120	48	0.00	65	190	0.15	0.26
April 2001 - 1,2-DCE	1600	150	0.09	105	21	0.00	120	70	0.00	65	1230	0.96	1.06
April 2001 - VC	1600	0	0.00	105	0	0.00	120	0	0.00	65	146	0.11	0.11
<b>Total</b>			0.20			0.00			0.01			1.22	<b>Total</b> 1.44
October 2000 - TCE	1500	750	0.54	187	710	0.06	213	78	0.01	55	120	0.08	0.69
October 2000 - 1,2-DCE	1500	1300	0.77	187	300	0.02	213	190	0.02	55	1580	1.04	1.85
October 2000 - VC	1500	0	0.00	187	0	0.00	213	0	0.00	55	170	0.11	0.11
<b>Total</b>			1.31			0.09			0.02			1.24	<b>Total</b> 2.65
April 2000 - TCE	1500	710	0.51	187	590	0.05	213	50	0.01	51	250	0.15	0.73
April 2000 - 1,2-DCE	1500	1400	0.82	187	330	0.02	213	150	0.01	51	1450	0.89	1.75
April 2000 - VC	1500	0	0.00	187	0	0.00	213	0	0.00	51	170	0.10	0.10
<b>Total</b>			1.34			0.08			0.02			1.15	<b>Total</b> 2.58
Nov/Dec 1999 - TCE	2590	540	0.68	187	9	0.00	213	23	0.00	47	120	0.07	0.75
Nov/Dec 1999 - 1,2-DCE	2590	1300	1.32	187	24	0.00	213	89	0.01	47	888	0.50	1.83
Nov/Dec 1999 - VC	2590	29	0.02	187	4	0.00	213	0	0.00	47	120	0.07	0.09
<b>Total</b>			2.01			0.00			0.01			0.64	<b>Total</b> 2.66
April 1999 - TCE	2730	94	0.12	98	8	0.00	112	21	0.00	71	254	0.22	0.34
April 1999 - 1,2-DCE	2730	210	0.23	98	21	0.00	112	47	0.00	71	1560	1.33	1.56
April 1999 - VC	2730	15	0.01	98	2	0.00	112	2	0.00	71	210	0.18	0.19
<b>Total</b>			0.36			0.00			0.00			1.73	<b>Total</b> 2.09
October 1998 - TCE	2575	2900	3.60	140	48	0.00	160	300	0.02	56	83	0.06	3.69
October 1998 - 1,2-DCE	2575	3500	3.54	140	50	0.00	160	250	0.02	56	254	0.17	3.73
October 1998 - VC	2575	0	0.00	140	0	0.00	160	0	0.00	56	110	0.07	0.07
<b>Total</b>			7.14			0.01			0.04			0.30	<b>Total</b> 7.49
April 1998 - TCE	1350	540	0.35	140	57	0.00	160	100	0.01	30	140	0.05	0.41
April 1998 - 1,2-DCE	1350	1000	0.53	140	110	0.01	160	200	0.01	30	1190	0.43	0.98
April 1998 - VC	1350	0	0.00	140	7	0.00	160	0	0.00	30	240	0.09	0.09
<b>Total</b>			0.88			0.01			0.02			0.57	<b>Total</b> 1.48

**Notes:** 1. Volatile organic compound (VOC) removal rate based on air flow rate and VOC concentrations measured in combined Southeast (SE) area soil vapor extraction (SVE) line.

2. VOC removal rate based on air flow rate and VOC concentrations measured in Aboveground Storage Tank (AST) area Branch Line G.

3. VOC removal rate based on air flow rate and VOC concentrations measured in AST area Branch Line H.

4. VOC removal rate based on groundwater flow rate and difference between groundwater influent and effluent concentrations.

5. SE area air flow rate based on sum of the six branch line field measurements.

6. IN = Influent. EFF = Effluent. Conc. = Concentration. scfm = Standard cubic feet per minute. ppb = Parts per billion = ug/L = micrograms per liter. lbs. = Pounds. gpm = Gallons per minute.

7. TCE = Trichloroethene. DCE = Dichloroethene. VC = Vinyl chloride.

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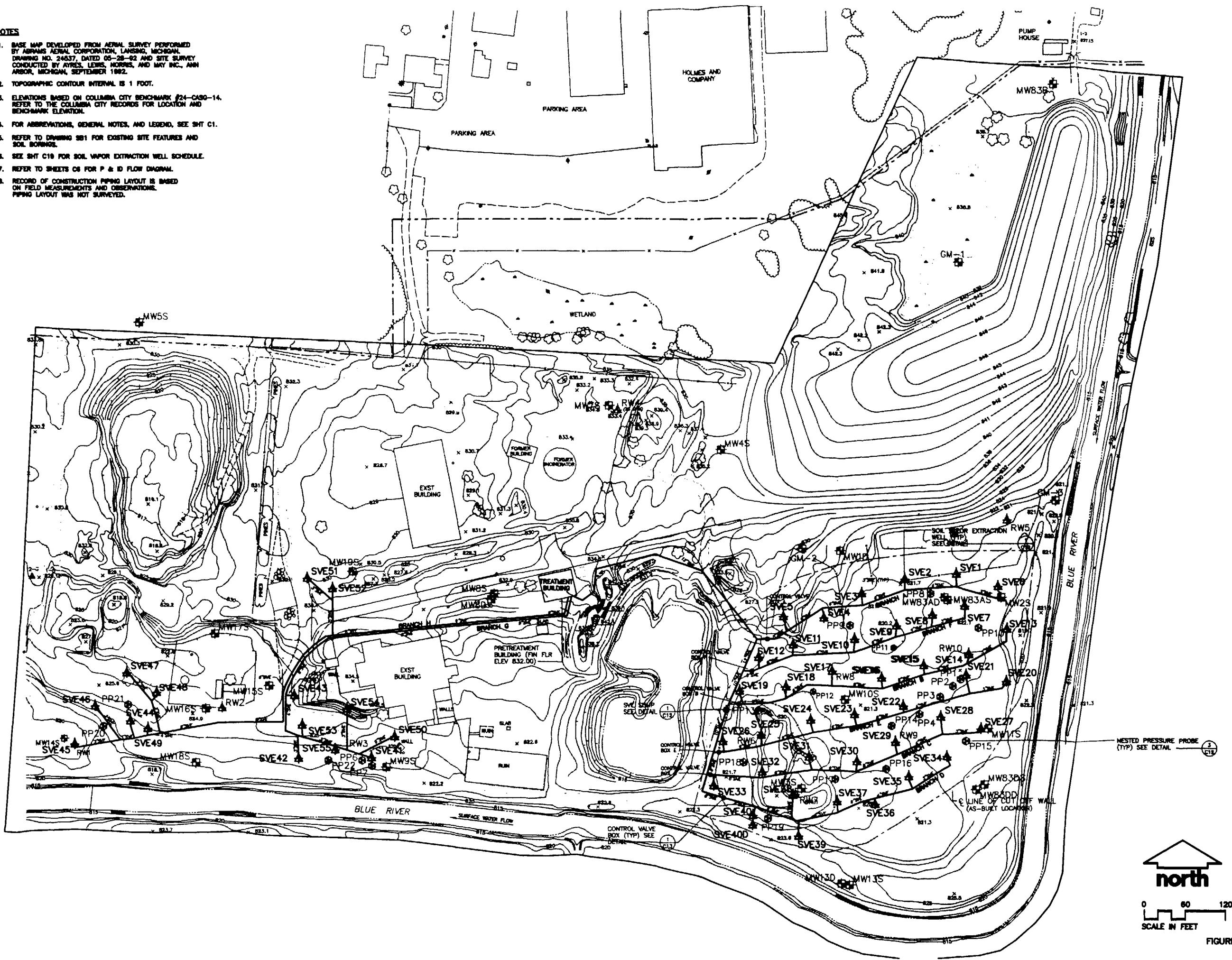
## Figures

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## NOTES

1. BASE MAP DEVELOPED FROM AERIAL SURVEY PERFORMED BY ABRAMS AERIAL CORPORATION, LANSING, MICHIGAN. DRAWING NO. 244537, DATED 05-26-82 AND SITE SURVEY CONDUCTED BY ATREES, LEWIS, NORRIS, AND MAY INC., ANN ARBOR, MICHIGAN, SEPTEMBER 1982.
  2. TOPOGRAPHIC CONTOUR INTERVAL IS 1 FOOT.
  3. ELEVATIONS BASED ON COLUMBIA CITY BENCHMARK #24-CASG-14. REFER TO THE COLUMBIA CITY RECORDS FOR LOCATION AND BENCHMARK ELEVATION.
  4. FOR ABBREVIATIONS, GENERAL NOTES, AND LEGEND, SEE SHT C1.
  5. REFER TO DRAWING SB1 FOR EXISTING SITE FEATURES AND SOIL BORINGS.
  6. SEE SHT C19 FOR SOIL VAPOR EXTRACTION WELL SCHEDULE.
  7. REFER TO SHEETS C6 FOR P & ID FLOW DIAGRAM.
  8. RECORD OF CONSTRUCTION PIPING LAYOUT IS BASED ON FIELD MEASUREMENTS AND OBSERVATIONS. PIPING LAYOUT WAS NOT SURVEYED.



RECORD OF CONSTRUCTION  
WAYNE RECLAMATION AND RECYCLE INC.  
COLUMBIA CITY, INDIANA

**RECORD OF CONSTRUCTION  
WAYNE RECLAMATION AND RECYCLE INC.  
COLUMBIA CITY, INDIANA**

**FIGURE 2**



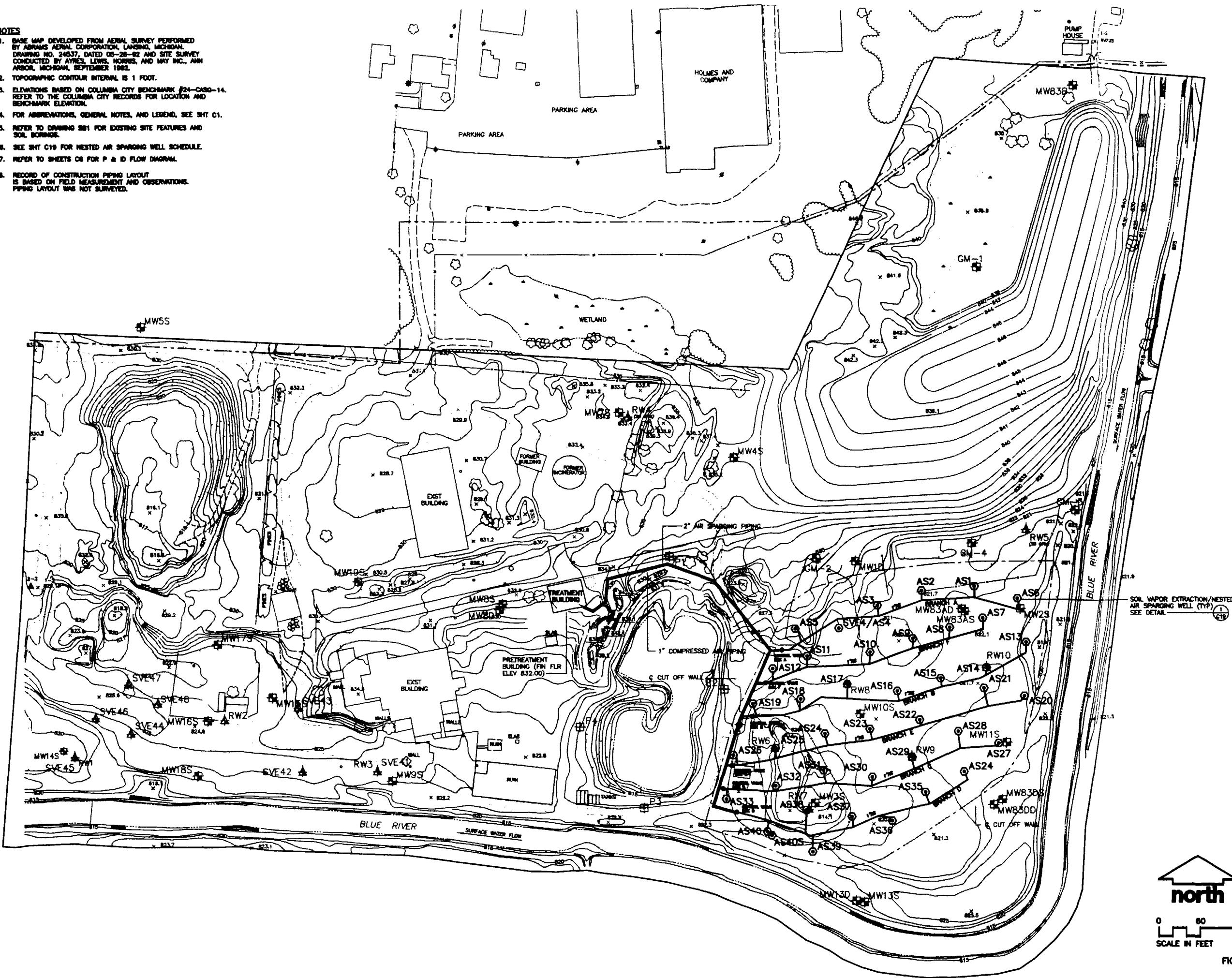
60 11

0 60 120  
SCALE IN FEET

**FIGURE**

## **NOTES**

1. BASE MAP DEVELOPED FROM AERIAL SURVEY PROVIDED BY ABRAMS AERIAL CORPORATION, LANSING, MICHIGAN.  
DRAWING NO. 24537, DATED 05-26-92 AND SITE SURVEY CONDUCTED BY ATYERS, LEWIS, MORRIS, AND MAY INC., ANN ARBOR, MICHIGAN, SEPTEMBER 1992.
  2. TOPOGRAPHIC CONTOUR INTERVAL IS 1 FOOT.
  3. ELEVATIONS BASED ON COLUMBIA CITY BENCHMARK #24-CASD-14. REFER TO THE COLUMBIA CITY RECORDS FOR LOCATION AND BENCHMARK ELEVATION.
  4. FOR ABBREVIATIONS, GENERAL NOTES, AND LEGEND, SEE SHT C1.
  5. REFER TO DRAWING 381 FOR EXISTING SITE FEATURES AND SOIL BORINGS.
  6. SEE SHT C19 FOR NESTED AIR SPARGING WELL SCHEDULE.
  7. REFER TO SHEETS C8 FOR P & ID FLOW DIAGRAM.
  8. RECORD OF CONSTRUCTION PIPING LAYOUT IS BASED ON FIELD MEASUREMENT AND OBSERVATIONS. PIPING LAYOUT WAS NOT SURVEYED.



**SITE PLAN - AIR SPARGING AND PNEUMATIC CONTROL PIPING**

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**RECORD OF CONSTRUCTION**

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**COLUMBIA CITY INDIANA**

WAYNE RECLAMATION AND RECYCLE INC.  
COLUMBIA CITY, INDIANA

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**Quantity Number**

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Page 1

**FIGURE 3**

SCALE IN FEET

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SCALE IN FEET

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FIGURE 3

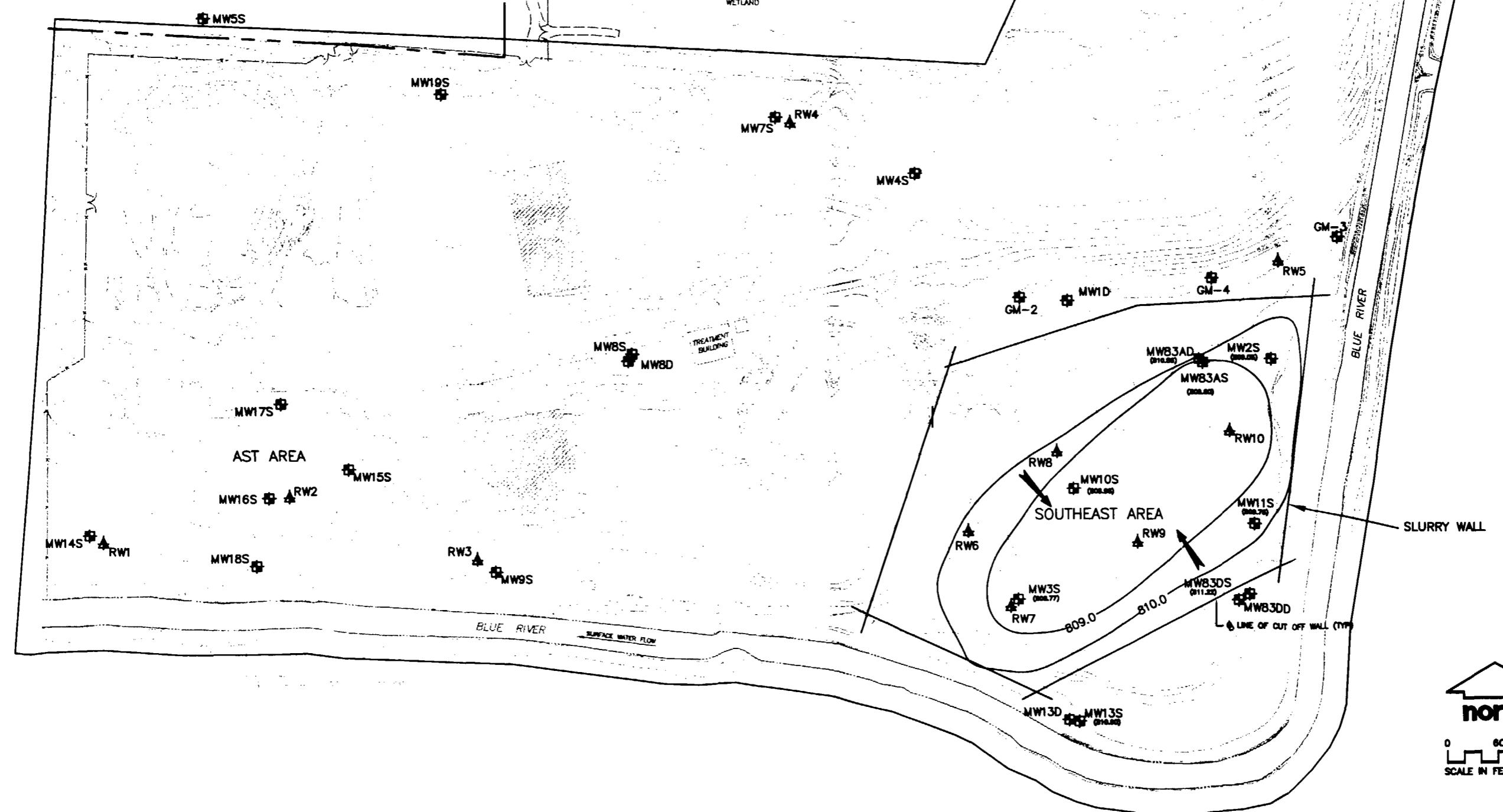
## FIGURE

## NOTES

1. BASE MAP DEVELOPED FROM AERIAL SURVEY PERFORMED BY ABRAMS AERIAL CORPORATION, LANSING, MICHIGAN. DRAWING NO. 24537, DATED 05-26-92 AND SITE SURVEY CONDUCTED BY ATYES, LEWIS, NORRIS, AND MAY INC., ANN ARBOR, MICHIGAN, SEPTEMBER 1992.
2. TOPOGRAPHIC CONTOUR INTERVAL IS 1 FOOT.
3. ELEVATIONS BASED ON COLUMBIA CITY BENCHMARK #24-CASO-14. REFER TO THE COLUMBIA CITY RECORDS FOR LOCATION AND BENCHMARK ELEVATION.
4. INDICATED CONTOURS BASED ON AVAILABLE MONTHLY WATER ELEVATIONS.
5. WATER ELEVATION FOR MW83AD SHOWN TO INDICATE VERTICAL GRADIENT.

## LEGEND

- 808.00 — GROUNDWATER CONTOUR (IN FEET)  
REFERENCED TO MEAN SEA LEVEL  
(DASHED WHERE INFERRED)  
CONTOUR INTERVAL = 0.5 FEET
- MW8S MONITORING WELL LOCATION AND NUMBER
- RW6 RECOVERY WELL LOCATION AND NUMBER
- GROUNDWATER FLOW DIRECTION



NOTES

1. BASE MAP DEVELOPED FROM AERIAL SURVEY PERFORMED BY ABRAMS AERIAL CORPORATION, LANSING, MICHIGAN. DRAWING NO. 24637, DATED 05-28-92 AND SITE SURVEY CONDUCTED BY ATYRES, LEWIS, NORRIS, AND MAY INC., ANN ARBOR, MICHIGAN, SEPTEMBER 1992.
  2. TOPOGRAPHIC CONTOUR INTERVAL IS 1 FOOT.
  3. ELEVATIONS BASED ON COLUMBIA CITY BENCHMARK #24-CASQ-14. REFER TO THE COLUMBIA CITY RECORDS FOR LOCATION AND BENCHMARK ELEVATION.
  4. INDICATED CONTOURS BASED ON AVAILABLE MONTHLY WATER ELEVATIONS.
  5. WATER ELEVATION FOR MWB34D SHOWN TO INDICATE VERTICAL GRADIENT.

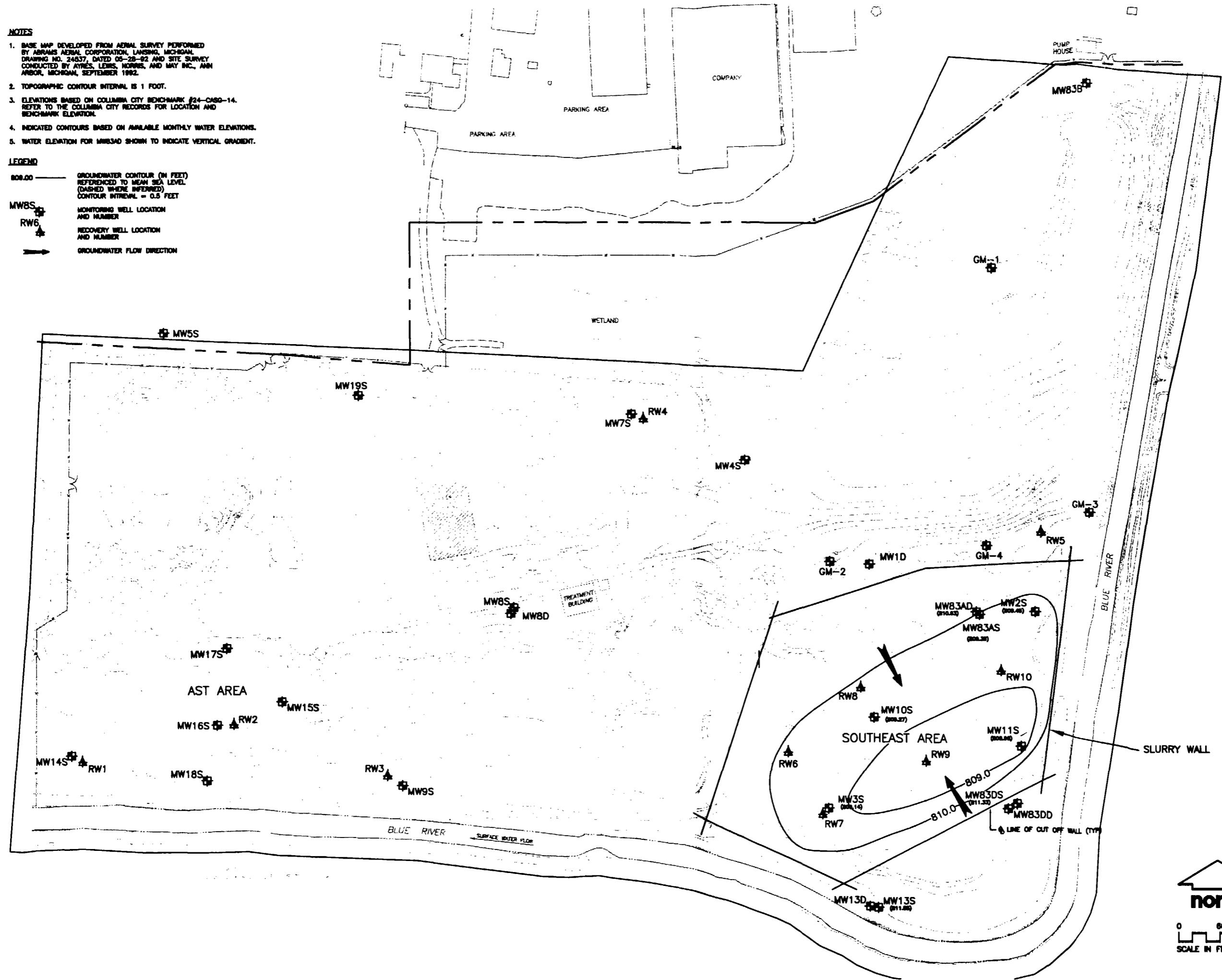
LEGEND

800.00 ————— GROUNDWATER CONTOUR (IN FEET)  
 REFERENCED TO MEAN SEA LEVEL  
 (DASHED WHERE INFERRED)  
 CONTOUR INTERVAL = 0.5 FEET

MWBS MONITORING WELL LOCATION

RW6 AND NUMBER  
RECOVERY WELL LOCATION  
AND NUMBER

**GROUNDWATER FLOW DIRECTION**



**GROUNDWATER CONTOURS – FEBRUARY 2002**

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**RECORD OF CONSTRUCTION**

**WAYNE RECLAMATION AND RECYCLE INC.**

**COLUMBIA CITY, INDIANA**

RECORD OF CONSTRUCTION  
WAYNE RECLAMATION AND RECYCLE INC.  
COLUMBIA CITY, INDIANA



0 60 120  
SCALE IN FEET

**FIGURE 4-2**

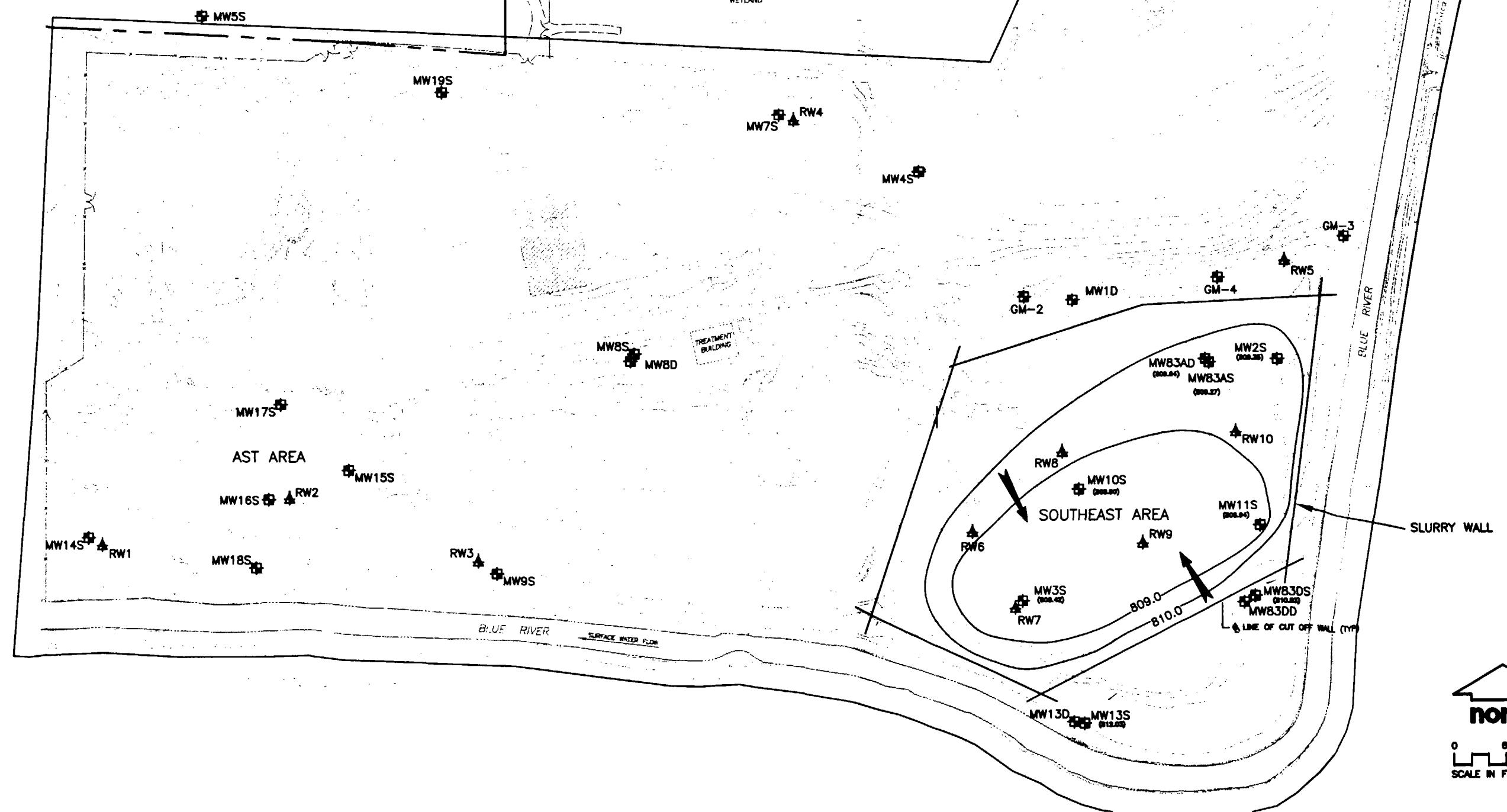
**FIGURE 4-2**

## NOTES

1. BASE MAP DEVELOPED FROM AERIAL SURVEY PERFORMED BY ABRAMS AERIAL CORPORATION, LANSING, MICHIGAN. DRAWING NO. 244537, DATED 05-26-92 AND SITE SURVEY CONDUCTED BY ATRIES, LEWIS, MORRIS, AND MAY INC., ANN ARBOR, MICHIGAN, SEPTEMBER 1992.
2. TOPOGRAPHIC CONTOUR INTERVAL IS 1 FOOT.
3. ELEVATIONS BASED ON COLUMBIA CITY BENCHMARK #24-CASG-14. REFER TO THE COLUMBIA CITY RECORDS FOR LOCATION AND BENCHMARK ELEVATION.
4. INDICATED CONTOURS BASED ON AVAILABLE MONTHLY WATER ELEVATIONS.
5. WATER ELEVATION FOR MW83AD SHOWN TO INDICATE VERTICAL GRADIENT.

## LEGEND

- 808.00 — GROUNDWATER CONTOUR (IN FEET)  
REFERENCED TO MEAN SEA LEVEL  
(DASHED WHERE INFERRED)  
CONTOUR INTERVAL = 0.5 FEET
- MWBS Monitoring Well Location and Number
- RW6 Recovery Well Location and Number
- GROUNDWATER FLOW DIRECTION



GROUNDWATER CONTOURS - MARCH 2002  
RECORD OF CONSTRUCTION  
WAYNE RECLAMATION AND RECYCLE INC.  
COLUMBIA CITY, INDIANA

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Sheet Number
Drawing Number

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FIGURE 4-3

## NOTES

- BASE MAP DEVELOPED FROM AERIAL SURVEY PERFORMED BY ABRAMS AERIAL CORPORATION, LANSING, MICHIGAN, DRAWING NO. 24537, DATED 05-28-92 AND SITE SURVEY CONDUCTED BY ATYES, LEWIS, MORRIS, AND MAY INC., ANN ARBOR, MICHIGAN, SEPTEMBER 1992.
- TOPOGRAPHIC CONTOUR INTERVAL IS 1 FOOT.
- ELEVATIONS BASED ON COLUMBIA CITY BENCHMARK #24-CASQ-14. REFER TO THE COLUMBIA CITY RECORDS FOR LOCATION AND BENCHMARK ELEVATION.
- INDICATED CONTOURS BASED ON AVAILABLE MONTHLY WATER ELEVATIONS.
- WATER ELEVATION FOR MW83AD SHOWN TO INDICATE VERTICAL GRADIENT.

## LEGEND

808.00 GROUNDWATER CONTOUR (IN FEET)  
REFERENCED TO MEAN SEA LEVEL  
(DASHED WHERE INFERRED)  
CONTOUR INTERVAL = 0.5 FEET

MW8S MONITORING WELL LOCATION  
AND NUMBER

RW6 RECOVERY WELL LOCATION  
AND NUMBER

GROUNDWATER FLOW DIRECTION

## COMPOUND ABBREVIATION

DCA - DICHLOROETHANE VC - VINYL CHLORIDE PCE - TETRACHLOROETHENE  
DCE - DICHLOROETHENE TCA - TRICHLOROETHANE  
DCP - DICHLOROPROPANE TOE - TRICHLOROETHANE

MW5S

MW18S

MW16S

## NOVEMBER 2001 RESULTS

COMPOUND	CONCENTRATION
1,1-DCA	6.1 µg/L
CIS-1,2-DCE	18.5 µg/L
1,1,1-TCA	1.4 µg/L
TCE	1.0 µg/L

MW14S

## APRIL 2002 RESULTS

COMPOUND	CONCENTRATION
1,1-DCA	8.4 µg/L
1,1,1-TCA	4.7 µg/L

MW18S

## NOVEMBER 2001 RESULTS

COMPOUND	CONCENTRATION
VC	1.6 µg/L

MW17S

## AST AREA

RW2

RW1

MW18S

## NOVEMBER 2001 RESULTS

COMPOUND	CONCENTRATION
VC	1.6 µg/L

RW3

MW9S

## APRIL 2002 RESULTS

COMPOUND	CONCENTRATION
CIS-1,2-DCE	3,800 µg/L
TRANS-1,2-DCE	63.3 µg/L
1,1-DCA	1.7 µg/L
1,1-DCE	7.6 µg/L
1,1,1-TCA	7.5 µg/L
PCE	45.9 µg/L
VC	4.1 µg/L
TCE	9,300 µg/L

MW18S

## NOVEMBER 2001 RESULTS

COMPOUND	CONCENTRATION
VC	1.6 µg/L

RW3

MW9S

## APRIL 2002 RESULTS

COMPOUND	CONCENTRATION
TOTAL-1,2-DCE	776 µg/L
VC	3.3 µg/L
TCE	5.0 µg/L
1,2-DCP	2.1 µg/L

MW3S

## OCTOBER 2001 RESULTS

COMPOUND	CONCENTRATION
TOTAL-1,2-DCE	776 µg/L

MW13S

## APRIL 2002 RESULTS

COMPOUND	CONCENTRATION
CIS-1,2-DCE	200 µg/L
TRANS-1,2-DCE	6.4 µg/L
VC	12 µg/L
TCE	140 µg/L
1,2-DCP	8.7 µg/L

MW13D

## APRIL 2002 RESULTS

COMPOUND	CONCENTRATION
CIS-1,2-DCE	350 µg/L

MW3DS

## APRIL 2002 RESULTS

COMPOUND	CONCENTRATION
VC	120 µg/L

MW83DS

## APRIL 2002 RESULTS

COMPOUND	CONCENTRATION
VC	120 µg/L

MW83DD

## APRIL 2002 RESULTS

COMPOUND	CONCENTRATION
VC	120 µg/L

LINE OF CUT OFF WALL (TOP)

SLURRY WALL

north

SCALE IN FEET

MWH

## NOVEMBER 2001 AND APRIL 2002 RECOVERY WELL DATA

	RW1 (NOV 2001)	RW2 (NOV 2001)	RW3 (NOV 2001)	RW4 (APRIL 2002)	RW5 (APRIL 2002)	RW6 (NOV 2001)	RW7 (NOV 2001)	RW8 (NOV 2001)	RW9 (NOV 2001)	RW10 (NOV 2001)
1,1-DCA	103 µg/L	18.2 µg/L	9.4 µg/L	1.2 µg/L	4.7 µg/L	<1.0 µg/L	1.7 µg/L	110 µg/L	3.0 µg/L	82 µg/L
1,2-DCA	<1.0 µg/L	<1.0 µg/L	<1.0 µg/L	<1.0 µg/L	<1.0 µg/L	<1.0 µg/L	<1.0 µg/L	<1.0 µg/L	<1.0 µg/L	<1.0 µg/L
1,1-DCE	<1.0 µg/L	<1.0 µg/L	<1.0 µg/L	<1.0 µg/L	2.2 µg/L	<1.0 µg/L	1.1 µg/L	30.8 µg/L	6.3 µg/L	7 µg/L
CIS-1,2-DCE	119 µg/L	45 µg/L	349 µg/L	147 µg/L	3,520 µg/L	43.1 µg/L	653 µg/L	18,500 µg/L	3,880 µg/L	11,000 µg/L
TRANS-1,2-DCE	1.3 µg/L	1.7 µg/L	8.8 µg/L	16.4 µg/L	143 µg/L	<1.0 µg/L	7.1 µg/L	144 µg/L	32.8 µg/L	89 µg/L
TCE	2.4 µg/L	1.2 µg/L	99.1 µg/L	<1.0 µg/L	219 µg/L	<1.0 µg/L	101 µg/L	5,250 µg/L	565 µg/L	306 µg/L
VC	54.8 µg/L	5.3 µg/L	30.4 µg/L	<1.0 µg/L	438 µg/L	112 µg/L	174 µg/L	802 µg/L	306 µg/L	548 µg/L
1,1,1-TCA	12.7 µg/L	4.4 µg/L	4.4 µg/L	<1.0 µg/L	3.1 µg/L	<1.0 µg/L	<1.0 µg/L	<1.0 µg/L	<1.0 µg/L	<1.0 µg/L
1,2-DCP	<1.0 µg/L	<1.0 µg/L	<1.0 µg/L	<1.0 µg/L	<1.0 µg/L	<1.0 µg/L	<1.0 µg/L	1.8 µg/L	2.0 µg/L	<1.0 µg/L

PUMP HOUSE	
MW83B (011.00)	MW83B
OCTOBER 2001 RESULTS	
COMPOUND	CONCENTRATION
VOC's	ND

GROUNDWATER CONTOURS - APRIL 2002  
WAYNE RECLAMATION AND RECYCLE INC.  
COLUMBIA CITY, INDIANA

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Sheet Number \_\_\_\_\_  
Drawing Number \_\_\_\_\_

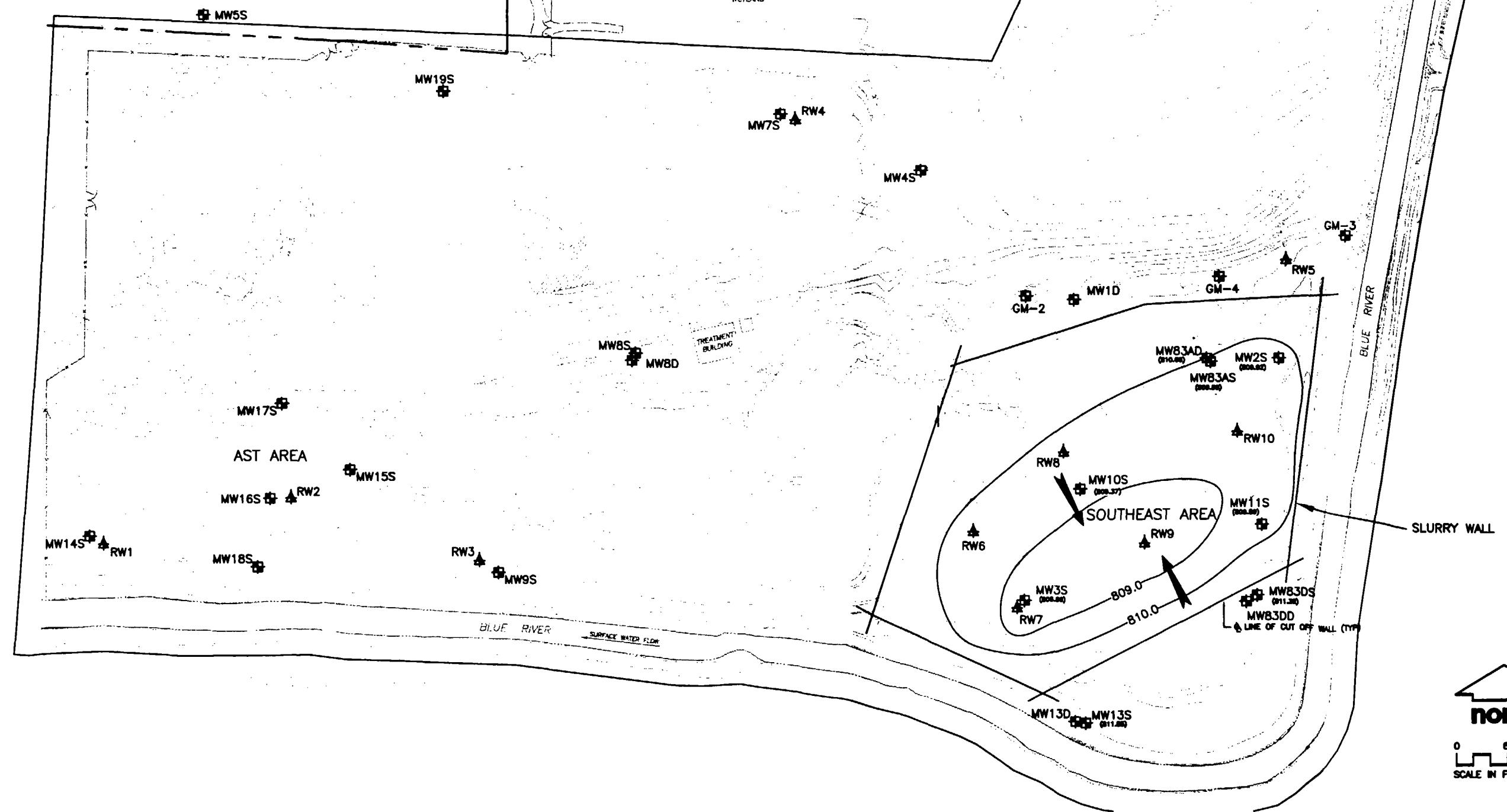
FIGURE 4-4

## NOTES

1. BASE MAP DEVELOPED FROM AERIAL SURVEY PERFORMED BY ABRAMS AERIAL CORPORATION, LANSING, MICHIGAN, DRAWING NO. 24537, DATED 06-28-92 AND SITE SURVEY CONDUCTED BY ATYES, LEWIS, NORRIS, AND MAY INC., ANN ARBOR, MICHIGAN, SEPTEMBER 1992.
2. TOPOGRAPHIC CONTOUR INTERVAL IS 1 FOOT.
3. ELEVATIONS BASED ON COLUMBIA CITY BENCHMARK #24-CASG-14. REFER TO THE COLUMBIA CITY RECORDS FOR LOCATION AND BENCHMARK ELEVATION.
4. INDICATED CONTOURS BASED ON AVAILABLE MONTHLY WATER ELEVATIONS.
5. WATER ELEVATION FOR MW83AD SHOWN TO INDICATE VERTICAL GRADIENT.

## LEGEND

- 808.00 — GROUNDWATER CONTOUR (IN FEET)  
REFERENCED TO MEAN SEA LEVEL  
(DASHED WHERE INFERRED)  
CONTOUR INTERVAL = 0.5 FEET
- MW8S MONITORING WELL LOCATION  
AND NUMBER
- RW6 RECOVERY WELL LOCATION  
AND NUMBER
- GROUNDWATER FLOW DIRECTION



GROUNDWATER CONTOURS - MAY 2002  
RECORD OF CONSTRUCTION  
WAYNE RECLAMATION AND RECYCLE INC.  
COLUMBIA CITY, INDIANA

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Sheet Number \_\_\_\_\_  
Drawing Number \_\_\_\_\_  
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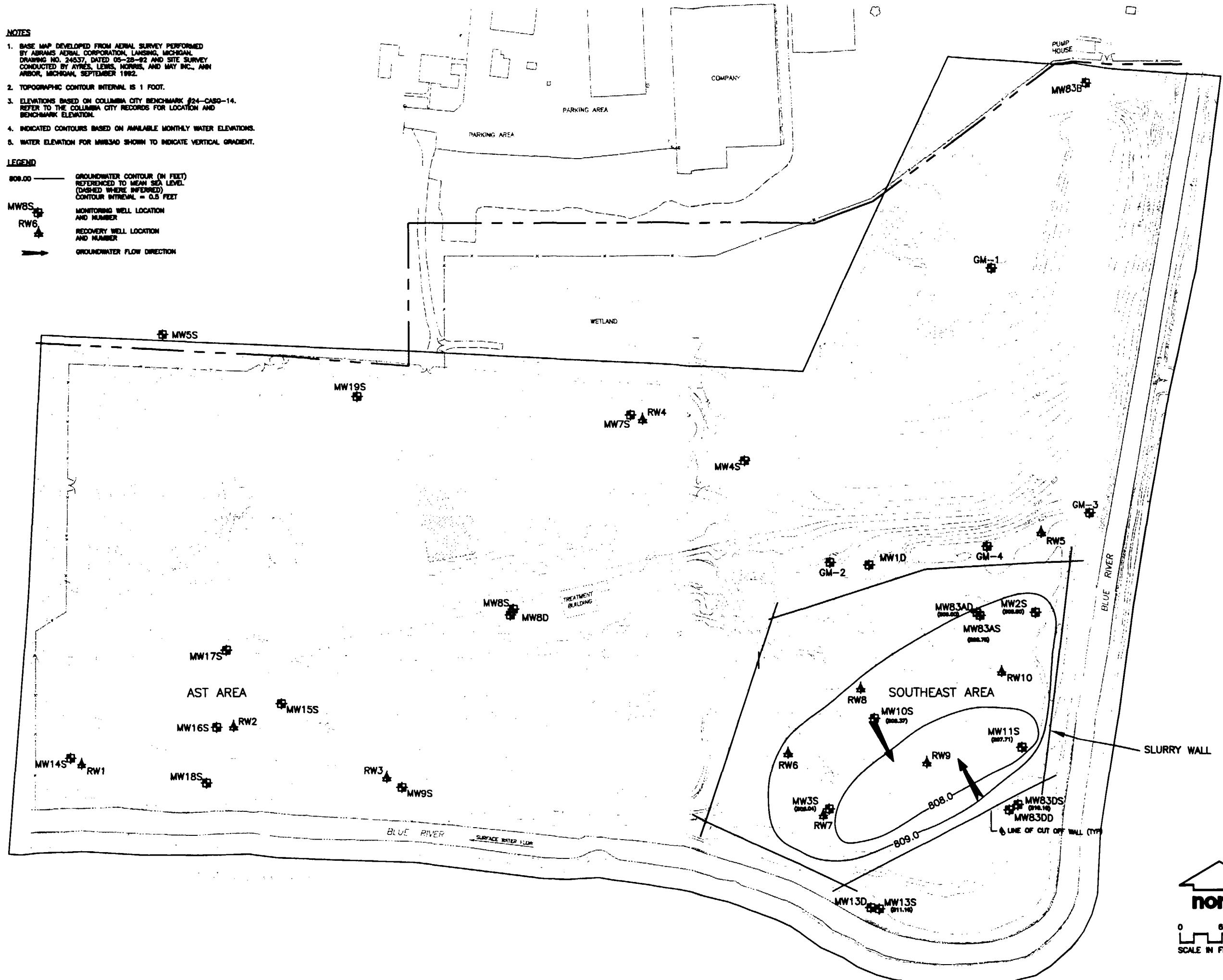
FIGURE 4-5

## NOTES

1. BASE MAP DEVELOPED FROM AERIAL SURVEY PERFORMED BY ABRAMS AERIAL CORPORATION, LANSING, MICHIGAN. DRAWING NO. 24537, DATED 05-28-92 AND SITE SURVEY CONDUCTED BY ATYES, LEWIS, MORRIS, AND MAY INC., ANN ARBOR, MICHIGAN, SEPTEMBER 1992.
2. TOPOGRAPHIC CONTOUR INTERVAL IS 1 FOOT.
3. ELEVATIONS BASED ON COLUMBIA CITY BENCHMARK #24-CASG-14. REFER TO THE COLUMBIA CITY RECORDS FOR LOCATION AND BENCHMARK ELEVATION.
4. INDICATED CONTOURS BASED ON AVAILABLE MONTHLY WATER ELEVATIONS.
5. WATER ELEVATION FOR MW83AD SHOWN TO INDICATE VERTICAL GRADIENT.

## LEGEND

- 808.00 — GROUNDWATER CONTOUR (IN FEET)  
REFERENCED TO MEAN SEA LEVEL  
(DASHED WHERE INFERRED)  
CONTOUR INTERVAL = 0.5 FOOT
- MW8S MONITORING WELL LOCATION  
AND NUMBER
- RW6 RECOVERY WELL LOCATION  
AND NUMBER
- GROUNDWATER FLOW DIRECTION



GROUNDWATER CONTOURS - JUNE 2002  
RECORD OF CONSTRUCTION  
WAYNE RECLAMATION AND RECYCLE INC.  
COLUMBIA CITY, INDIANA

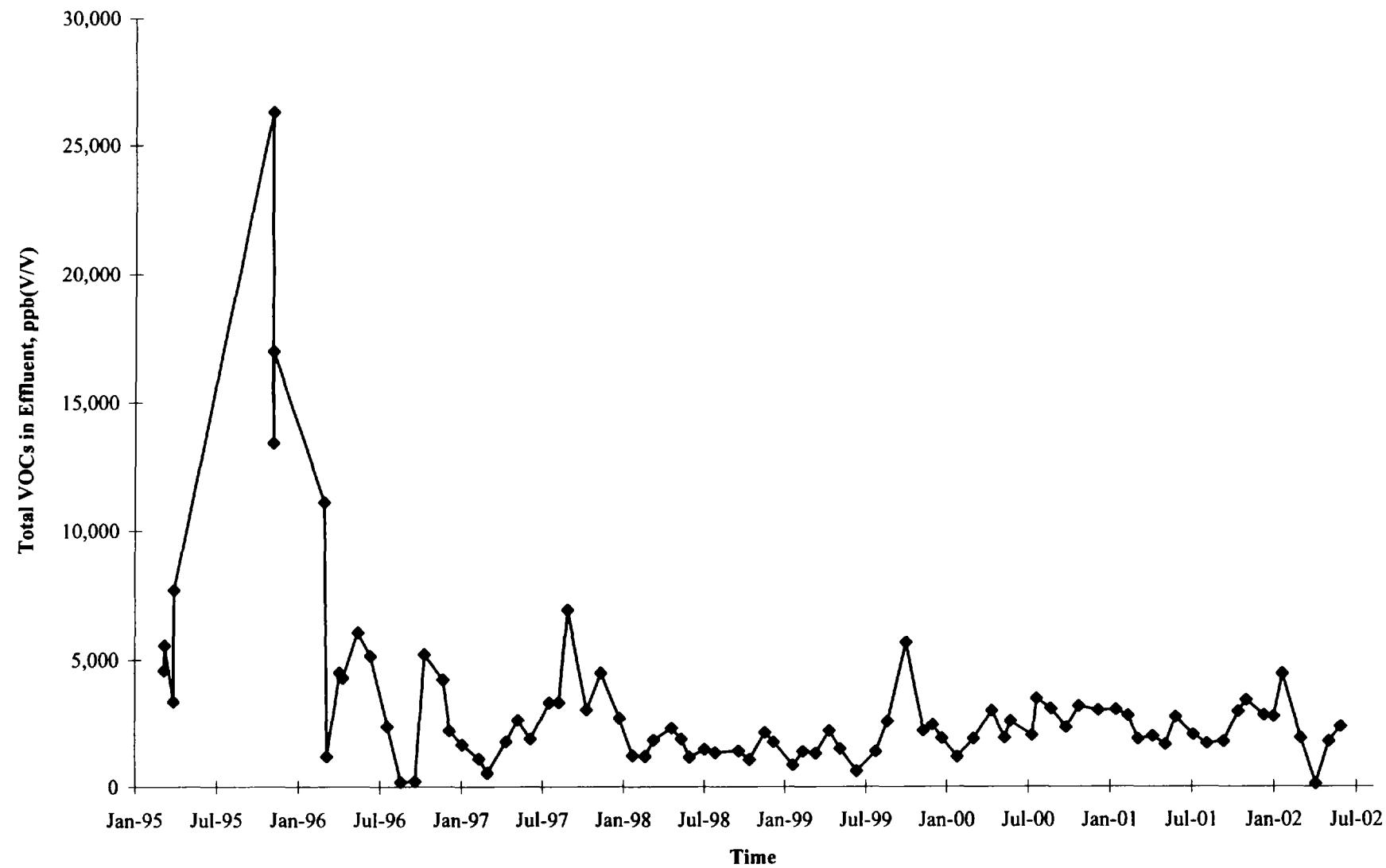
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MWH

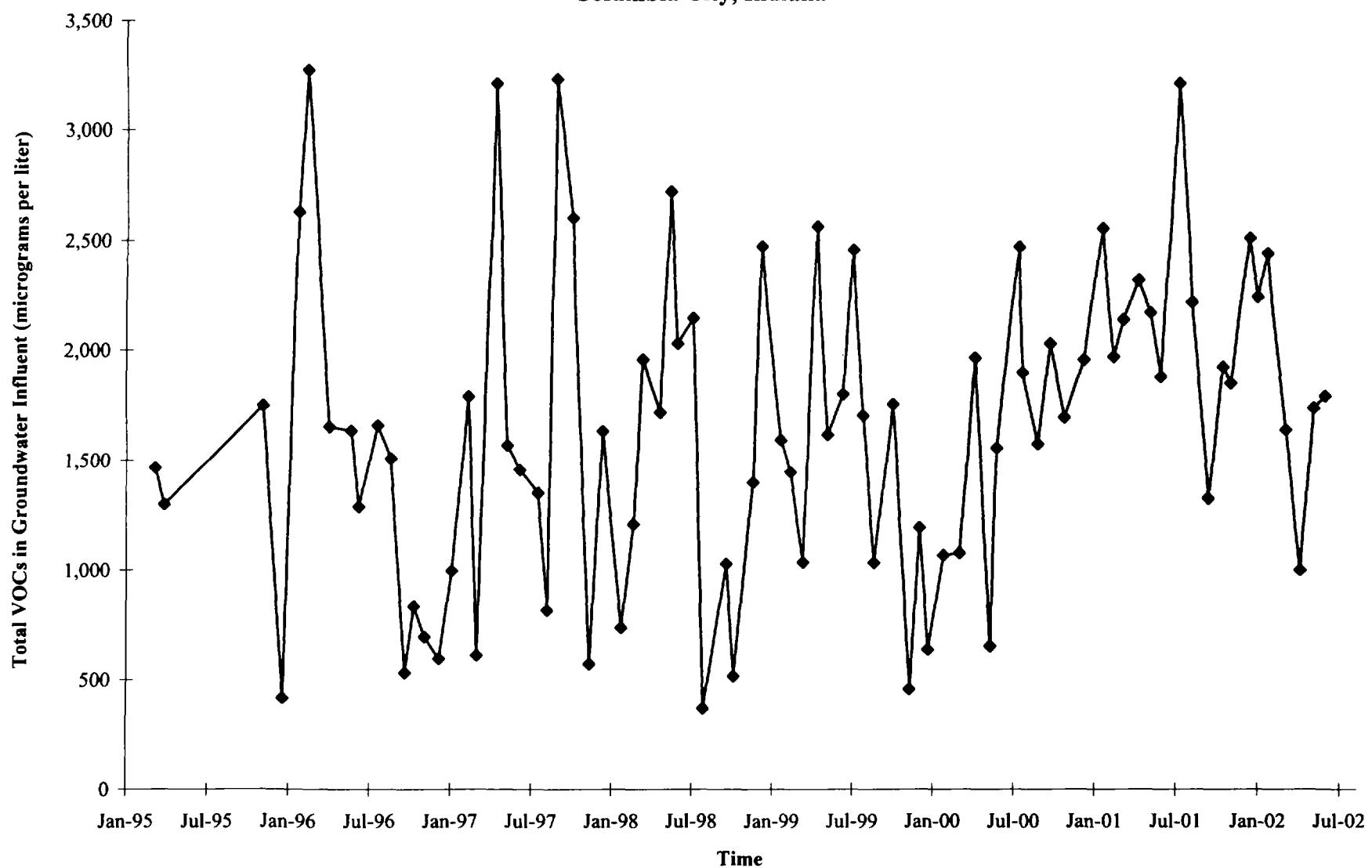
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SCALE IN FEET

FIGURE 4-6

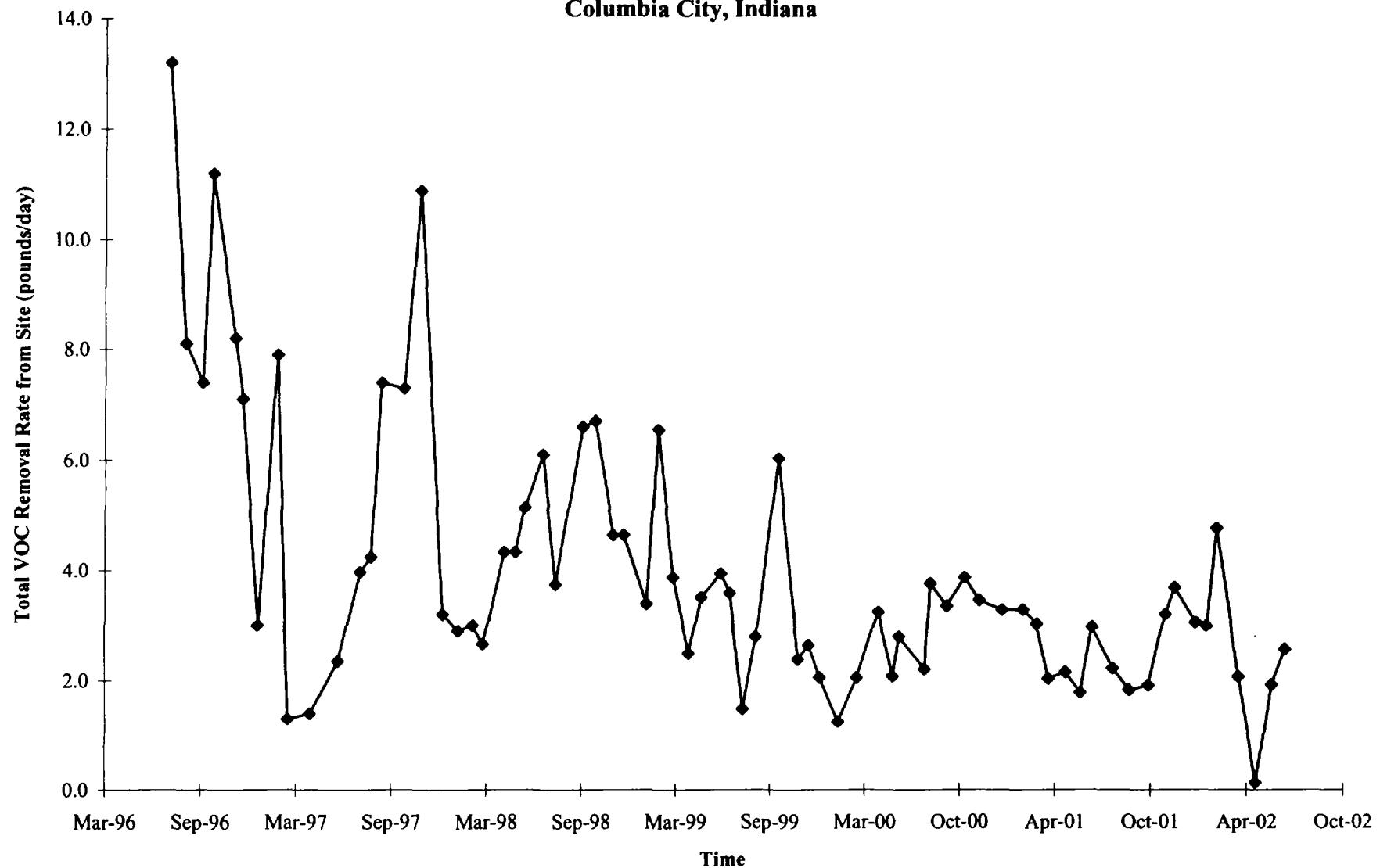
**Figure 5**  
**Summary of Air Treatment System Effluent Data**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**



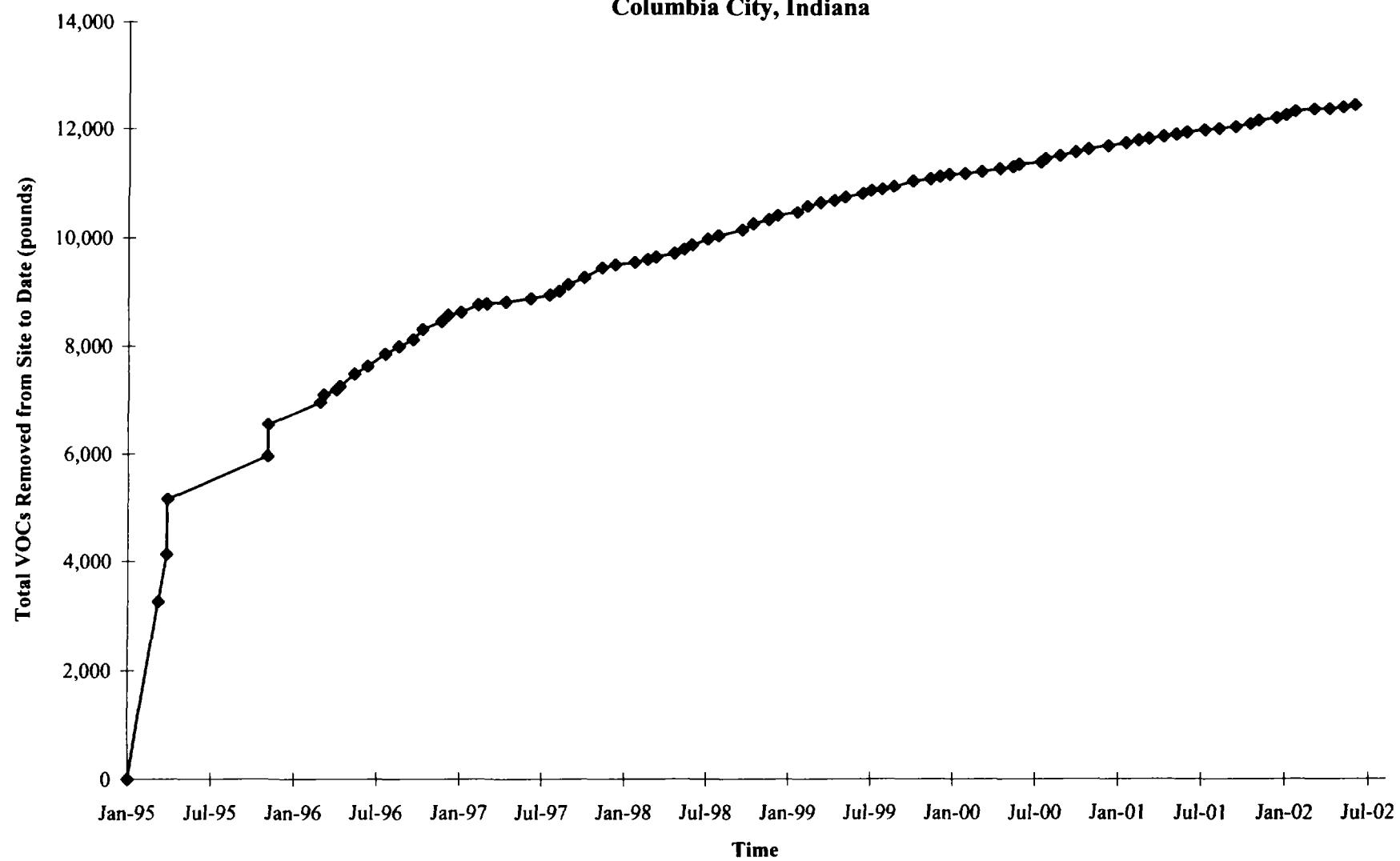
**Figure 6**  
**Summary of Groundwater Treatment System Influent Data**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**



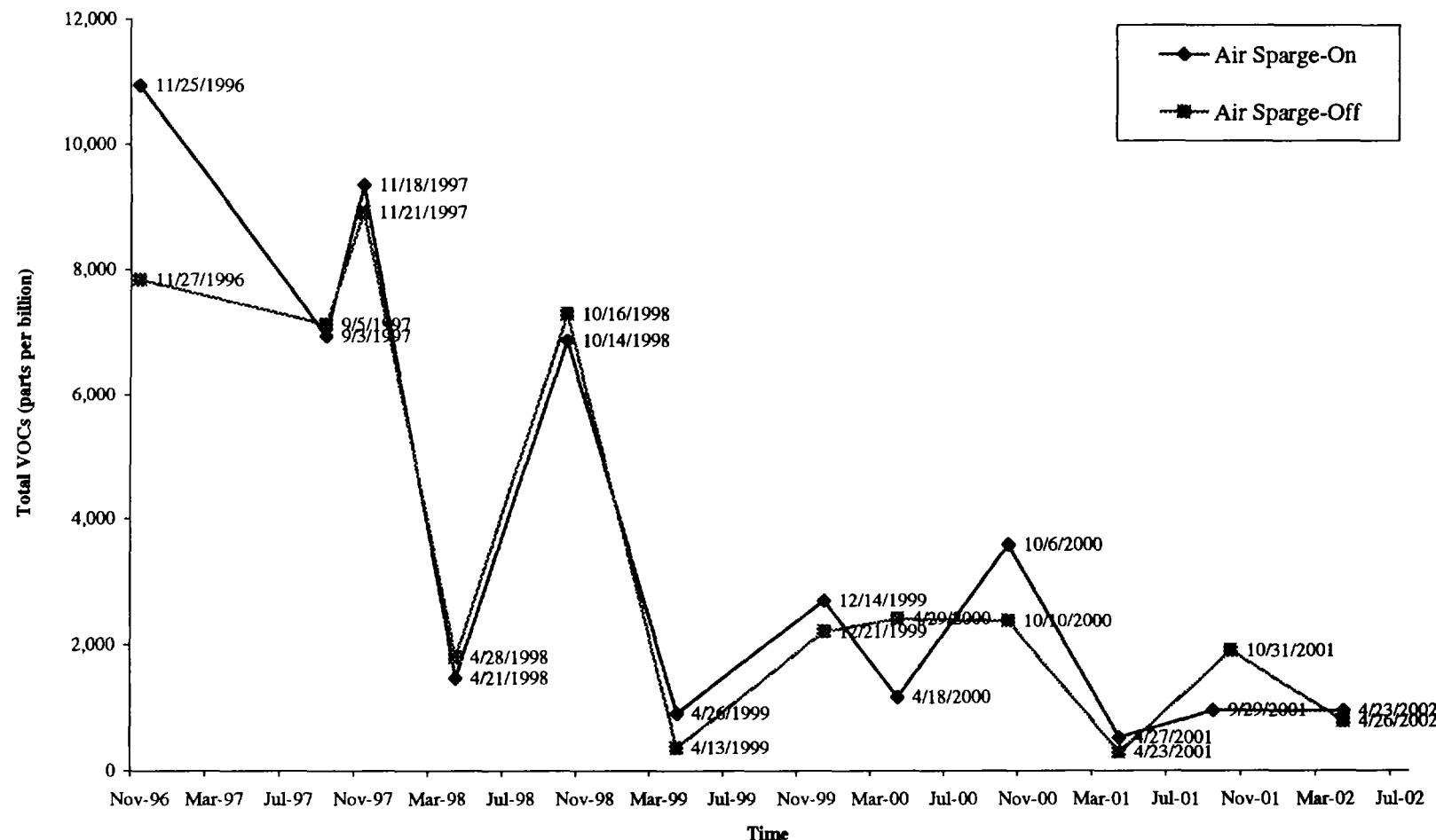
**Figure 7**  
**Summary of Site VOC Removal Rates**  
**Soil and Groundwater Remediation Systems**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**



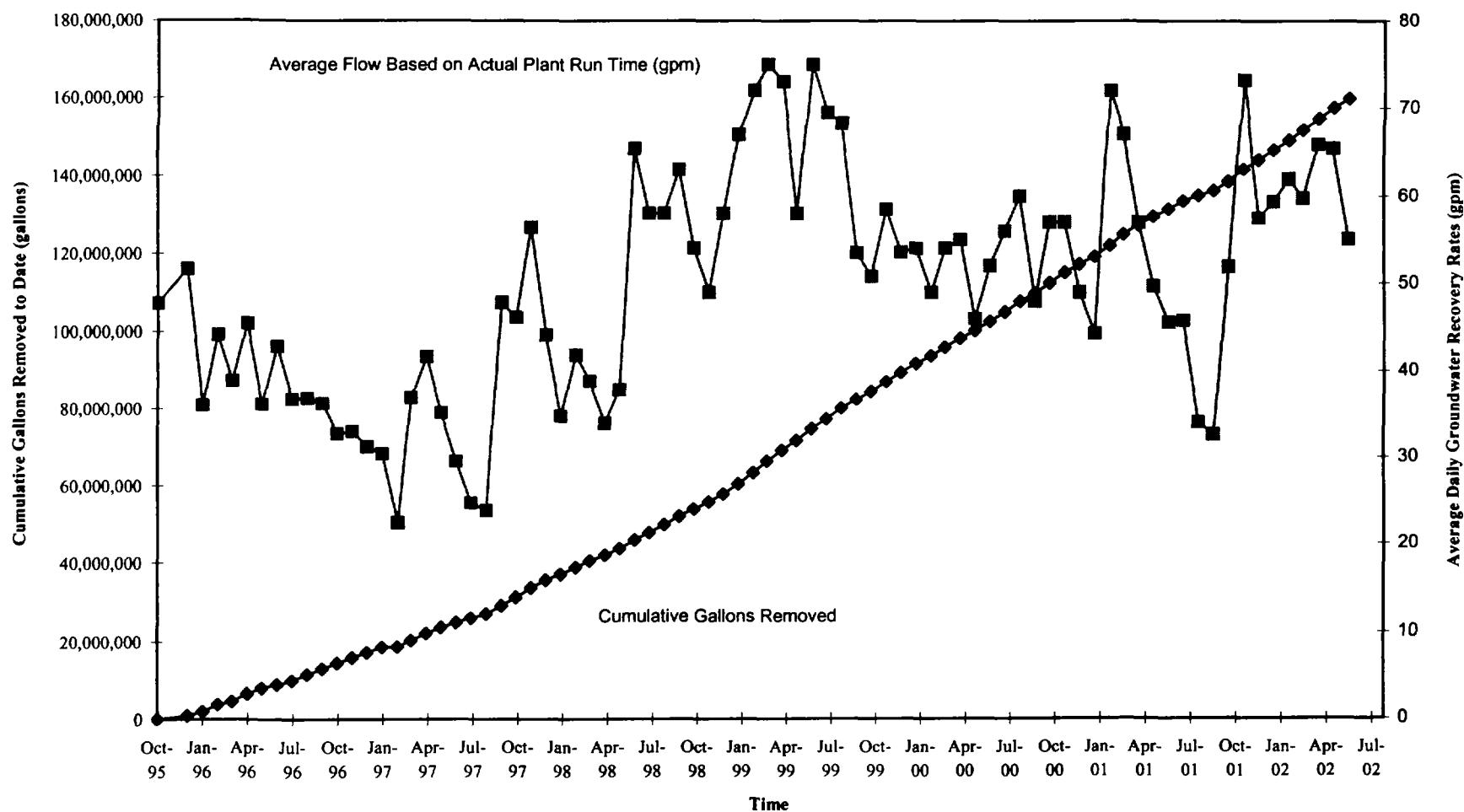
**Figure 8**  
**Cumulative VOCs Removed From Site**  
**Soil and Groundwater Remediation Systems**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**



**Figure 9**  
**Effect of Air Sparge on SVE VOC Concentrations**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**



**Figure 10**  
**Cumulative and Sustained Groundwater Recovery**  
**Wayne Reclamation and Recycling**  
**Columbia City, Indiana**



## **APPENDIX A**

### **SUMMARY OF AIR DISPERSION MODELING AND CUMULATIVE CANCER RISK CALCULATIONS**

## **APPENDIX A**

### **Summary of Air Dispersion Modeling and Cumulative Cancer Risk Calculations Wayne Reclamation and Recycling Columbia City, Indiana**

The following summarizes the air modeling conducted by Montgomery Watson for the Wayne Reclamation and Recycling facility in Columbia City, Indiana to assess the maximum annual average ground-level concentration that could occur at any point outside the perimeter of the Wayne Reclamation site. A description of the model, modeling procedures, and results is provided below.

#### **AIR DISPERSION MODELING PROCEDURES**

The modeling was performed by utilizing the United States Environmental Protection Agency (USEPA) model Industrial Source Complex Long Term (ISC-LT) to evaluate the ambient air impact of emissions from the site. Dispersion modeling was conducted on both the treatment system influent and effluent in order to compare the risks associated with both treated and untreated air.

#### **Meteorological Data**

Meteorological data from 1985 was inputted into the model for the Columbia City, Indiana region. Model output is highly sensitive to such data, as changes in atmospheric conditions will directly affect the ability of a discharged pollutant to disperse in the surrounding air. Meteorological data such as wind speed, wind direction, urban and rural mixing heights, Pasquill Stability Classifications (rated A to G, G being the most stable), and ambient air temperature were converted into a binary data package. The package was then loaded into the ISC-LT model. The model then evaluated these conditions with the remaining model input parameters to identify which combinations of these conditions would result in maximum ground level pollutant concentrations.

#### **Emissions Source Data**

The following data represents the emissions parameters at the Wayne Reclamation site which were inputted into the model:

Stack Height	9.1 meters
Stack Diameter	0.4064 meters
Stack Base Elevation	6.1 meters
Exhaust Temperature	73° C
Gas Exit Velocity	13.08 m/s
Volumetric Flow Rate	1.7 cubic meters/sec
Influent/Effluent Conc.	Sampling events (see Table 14)
Terrain	Flat
Dispersion Coefficients	Rural
Final Plume Rise	On

Stack-tip Downwash                      On  
Receptor Height                        0 meters

### **Modeling Procedure**

A grid was established to describe the relationship of the emission source with its surroundings, including the location of the site boundaries and any potential receptors. A cartesian grid was established around the facility to determine ground-level concentration locations.

### **HUMAN HEALTH RISK ASSESSMENT**

The maximum concentrations determined by the air modeling study were multiplied by unit risk factors to obtain the excess carcinogenic risk posed by the emissions through the inhalation route. The unit risk factors used in this study were developed from toxicity values included in U.S.EPA's Integrated Risk Information System (IRIS), U.S.EPA's "Health Assessment Summary Tables" (HEAST, Annual FY-1995), and information provided by the U.S.EPA Environmental Criteria Assessment Office (ECAO). The unit risk factors assume a chronic exposure to the carcinogenic chemicals for 24 hours a day, 365 days a year for 70 years. The unit risk factors for the constituents of concern are:

Vinyl Chloride -	7.80E-05
1,1-Dichloroethane -	1.63E-08
Trichloroethene -	2.00E-06
Tetrachloroethene -	5.90E-06

The excess cancer risk to the maximally exposed individual can be calculated by multiplying the unit risk factor by the ambient concentration of the chemical in question. In a residential zone, the maximally exposed individual is assumed to be continuously exposed to the chemical for 70 years.

The maximum individual excess cancer risk (MICR) to the maximally exposed individual due to air toxic emissions from the Wayne Reclamation site was calculated by multiplying the appropriate risk factor by the maximum annual ground level concentration (GLC) at the maximally exposed individual:

$$\text{MICR} = \text{URF} * \text{GLC}$$

A summary of these calculations using concentrations generated from the model output is provided in Table 15. An example model input/output is attached.

C STARTING  
 CU TITLEONE Fort Wayne Reclamation Site, 30 ft stack  
 CO MODELOPT DEFAULT CONC RURAL  
 C AVERTIME ANNUAL  
 C POLLUTID OTHER  
 CO DCAYCOEF .000000  
 CO RUNORNOT RUN  
 C) ERRORFIL ERRORS.OUT  
 C) FINISHED  
  
 S) STARTING  
 : Source Location Cards:  
 \*\* SRCID SRCTYP XS YS ZS  
 SO LOCATION 1 POINT 0.000 0.000 0.000  
  
 : Source Parameter Cards:  
 \*\* POINT: SRCID QS HS TS VS DS  
 \*\* VOLUME: SRCID QS HS SYINIT SZINIT  
 : AREA: SRCID QS HS XINIT  
  
 SO SRCPARAM 1 0.007 9.1440 293.15 7.5 1.0000  
 D EMISUNIT .100000E+07 (GRAMS/SEC) (MICROGRAMS/CUBIC-METER)  
 D SRCGROUP ALL  
 SO FINISHED

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RE DISCCART 500 700  
RE DISCCART 500 800  
E : DISCCART 500 900  
E : DISCCART 600 -800  
RE DISCCART 600 -700  
RE DISCCART 600 -600  
E : DISCCART 600 -500  
E : DISCCART 600 -400  
RE DISCCART 600 -300  
E : DISCCART 600 -200  
E : DISCCART 600 -100  
RE DISCCART 600 0  
RE DISCCART 600 100  
E : DISCCART 600 200  
E : DISCCART 600 300  
RE DISCCART 600 400  
RE DISCCART 600 500  
E : DISCCART 600 600  
E : DISCCART 600 700  
RE DISCCART 600 800  
E : DISCCART 600 900  
E : DISCCART 700 -700  
RE DISCCART 700 -600  
RE DISCCART 700 -500  
E : DISCCART 700 -400  
E : DISCCART 700 -300  
RE DISCCART 700 -200  
RE DISCCART 700 -100  
E : DISCCART 700 0  
E : DISCCART 700 100  
RE DISCCART 700 200  
E : DISCCART 700 300  
E : DISCCART 700 400  
RE DISCCART 700 500  
RE DISCCART 700 600  
E : DISCCART 700 700  
E : DISCCART 700 800  
RE DISCCART 700 900  
RE DISCCART 800 -600  
E : DISCCART 800 -500  
RE DISCCART 800 -400  
RE DISCCART 800 -300  
E : DISCCART 800 -200  
E : DISCCART 800 -100  
RE DISCCART 800 0  
RE DISCCART 800 100  
E : DISCCART 800 200

E DISCCART 800 300  
RE DISCCART 800 400  
RE DISCCART 800 500  
E DISCCART 800 600  
E DISCCART 800 700  
RE DISCCART 800 800  
RE DISCCART 900 -300  
E DISCCART 900 -200  
E DISCCART 900 -100  
RE DISCCART 900 0  
E DISCCART 900 100  
E DISCCART 900 200  
RE DISCCART 900 300  
RE DISCCART 900 400  
E DISCCART 900 500  
E DISCCART 900 600  
RE FINISHED

E STARTING  
.E INPUTFIL METFIL.STR FREE  
ME ANEMHGHT 10.00 METERS  
.E SURFDATA 14827 1985 SURFNAME  
.E UAIRDATA 13840 1985 UAIRNAME  
ME STARDATA ANNUAL  
ME AVESPEED 1.54 3.09 3.95 5.14 8.23 10.80  
.E AVETEMPS ANNUAL 280 280 280 280 280 280  
.E AVEMIXHT ANNUAL A 440 440 440 440 440 440  
ME AVEMIXHT ANNUAL B 440 440 440 440 440 440  
ME AVEMIXHT ANNUAL C 440 440 440 440 440 440  
.E AVEMIXHT ANNUAL D 440 440 440 440 440 440  
.E AVEMIXHT ANNUAL E 440 440 440 440 440 440  
ME AVEMIXHT ANNUAL F 440 440 440 440 440 440  
.E FINISHED

OJ STARTING  
OJ RECTABLE SRCGRP  
OJ FINISHED

\*\*\*\*\*  
\*\*\* SETUP Finishes Successfully \*\*\*  
\*\*\*\*\*

\*\*\* ISCLT3 - VERSION 95250 \*\*\*

\*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\*\* MODELING OPTIONS USED: CONC RURAL FLAT DEFAULT

\*\*\* MODEL SETUP OPTIONS SUMMARY

\*Model Is Setup For Calculation of Average CONcentration Values.  
\*\*Model Does NOT Use GRIDDED TERRAIN Data for Depletion Calculations

\*Model Uses NO plume DEPLETION.

\*\*Model Uses RURAL Dispersion.

\*Model Uses Regulatory DEFAULT Options:

1. Final Plume Rise.
2. Stack-tip Downwash.
3. Buoyancy-induced Dispersion.
4. Default Wind Profile Exponents.
5. Default Vertical Potential Temperature Gradients.
6. "Upper Bound" Values For Supersquat Buildings.
7. No Exponential Decay for RURAL Mode

\*\*Model Assumes Receptors on FLAT Terrain.

:\*Model Assumes No FLAGPOLE Receptor Heights.

\*\*Model Calculates 1 STAR Average(s) for the Following Months: 0 0 0 0 0  
Seasons/Quarters: 0 0 0 0  
and Annual: 1

\*\*Data File Includes 1 STAR Summaries for the Following Months: 0 0 0 0 0  
Seasons/Quarters: 0 0 0 0  
and Annual: 1

\*\*This Run Includes: 1 Source(s); 1 Source Group(s); and 386 Recepto

\*\*The Model Assumes A Pollutant Type of: OTHER

\*\*Model Set To Continue RUNning After the Setup Testing.

\*\*Output Options Selected:

Model Outputs Tables of Long Term Values by Receptor (RECTABLE Keyword)

\*\*Misc. Inputs: Anem. Hgt. (m) = 10.00 ; Decay Coef. = .0000 ;  
Emission Units = (GRAMS/SEC) ;  
Output Units = (MICROGRAMS/CUBIC-METER) ;

\*\*Input Runstream File: INPUT.FIL

; \*\*Output Pri

\*\*Error Message File: ERRORS.OUT

\*\*\* ISCLT3 - VERSION 95250 \*\*\*

\*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\*\* MODELING OPTIONS USED: CONC RURAL FLAT DEFAULT

\*\*\* POINT SOURCE DATA \*\*\*

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (USER UNITS)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	E
1	0	.70000E-02	.0	.0	.0	9.14	293.15	-

\*\*\* ISCLT3 - VERSION 95250 \*\*\*      \*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\*\* MODELING OPTIONS USED: CONC      RURAL      FLAT      DEFAULT

\*\*\* SOURCE IDs DEFINING SOURCE GROUPS

GROUP ID	SOURCE IDs
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ALL	1
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\*\*\* ISCLT3 - VERSION 95250 \*\*\*

\*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\*\* MODELING OPTIONS USED: CONC RURAL FLAT DEFAULT

**\*\*\* DISCRETE CARTESIAN RECEPTORS \*\***  
(X-COORD, Y-COORD, ZELEV, ZFLAG)  
(METERS)

(	-241.0,	116.0,	.0,	.0);	(	-239.0,	-85.
(	-239.0,	-45.0,	.0,	.0);	(	-239.0,	-5.
(	-239.0,	35.0,	.0,	.0);	(	-239.0,	75.
(	-204.0,	-86.0,	.0,	.0);	(	-198.0,	114.
(	-169.0,	-86.0,	.0,	.0);	(	-155.0,	112.
(	-134.0,	-86.0,	.0,	.0);	(	-112.0,	110.
(	-89.0,	-91.0,	.0,	.0);	(	-70.0,	181.
(	-69.0,	144.0,	.0,	.0);	(	-68.0,	107.
(	-45.0,	-95.0,	.0,	.0);	(	-27.0,	181.
(	-1.0,	-99.0,	.0,	.0);	(	16.0,	181.
(	43.0,	-103.0,	.0,	.0);	(	59.0,	181.
(	70.0,	-111.0,	.0,	.0);	(	97.0,	-119.
(	102.0,	183.0,	.0,	.0);	(	102.0,	231.
(	123.0,	-133.0,	.0,	.0);	(	142.0,	231.
(	149.0,	-146.0,	.0,	.0);	(	182.0,	231.
(	184.0,	-145.0,	.0,	.0);	(	202.0,	-137.
(	209.0,	-116.0,	.0,	.0);	(	215.0,	-69.
(	221.0,	-31.0,	.0,	.0);	(	222.0,	231.
(	227.0,	7.0,	.0,	.0);	(	223.0,	45.
(	242.0,	91.0,	.0,	.0);	(	251.0,	136.
(	260.0,	181.0,	.0,	.0);	(	262.0,	207.
(	264.0,	232.0,	.0,	.0);	(	-900.0,	-800.
(	-900.0,	-700.0,	.0,	.0);	(	-900.0,	-600.
(	-900.0,	-500.0,	.0,	.0);	(	-900.0,	-400.
(	-900.0,	-300.0,	.0,	.0);	(	-900.0,	-200.
(	-900.0,	-100.0,	.0,	.0);	(	-900.0,	.
(	-900.0,	100.0,	.0,	.0);	(	-900.0,	200.
(	-900.0,	300.0,	.0,	.0);	(	-900.0,	400.
(	-900.0,	500.0,	.0,	.0);	(	-900.0,	600.
(	-900.0,	700.0,	.0,	.0);	(	-900.0,	800.
(	-900.0,	900.0,	.0,	.0);	(	-800.0,	-800.
(	-800.0,	-700.0,	.0,	.0);	(	-800.0,	-600.
(	-800.0,	-500.0,	.0,	.0);	(	-800.0,	-400.
(	-800.0,	-300.0,	.0,	.0);	(	-800.0,	-200.
(	-800.0,	-100.0,	.0,	.0);	(	-800.0,	.
(	-800.0,	100.0,	.0,	.0);	(	-800.0,	200.
(	-800.0,	300.0,	.0,	.0);	(	-800.0,	400.
(	-800.0,	500.0,	.0,	.0);	(	-800.0,	600.
(	-800.0,	700.0,	.0,	.0);	(	-800.0,	800.
(	-800.0,	900.0,	.0,	.0);	(	-700.0,	-800.
(	-700.0,	-700.0,	.0,	.0);	(	-700.0,	-600.
(	-700.0,	-500.0,	.0,	.0);	(	-700.0,	-400.
(	-700.0,	-300.0,	.0,	.0);	(	-700.0,	-200.
(	-700.0,	-100.0,	.0,	.0);	(	-700.0,	.
(	-700.0,	100.0,	.0,	.0);	(	-700.0,	200.

\*\*\* ISCLT3 - VERSION 95250 \*\*\*

\*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\*\* MODELING OPTIONS USED: CONC RURAL FLAT DEFAULT

\*\*\* DISCRETE CARTESIAN RECEPTORS \*\*  
 (X-COORD, Y-COORD, ZELEV, ZFLAG)  
 (METERS)

(	-700.0,	300.0,	.0,	.0);	(	-700.0,	400.
(	-700.0,	500.0,	.0,	.0);	(	-700.0,	600.
(	-700.0,	700.0,	.0,	.0);	(	-700.0,	800.
(	-700.0,	900.0,	.0,	.0);	(	-600.0,	-800.
(	-600.0,	-700.0,	.0,	.0);	(	-600.0,	-600.
(	-600.0,	-500.0,	.0,	.0);	(	-600.0,	-400.
(	-600.0,	-300.0,	.0,	.0);	(	-600.0,	-200.
(	-600.0,	-100.0,	.0,	.0);	(	-600.0,	.
(	-600.0,	100.0,	.0,	.0);	(	-600.0,	200.
(	-600.0,	300.0,	.0,	.0);	(	-600.0,	400.
(	-600.0,	500.0,	.0,	.0);	(	-600.0,	400.
(	-600.0,	300.0,	.0,	.0);	(	-600.0,	500.
(	-600.0,	600.0,	.0,	.0);	(	-600.0,	700.
(	-600.0,	800.0,	.0,	.0);	(	-600.0,	900.
(	-500.0,	-800.0,	.0,	.0);	(	-500.0,	-700.
(	-500.0,	-600.0,	.0,	.0);	(	-500.0,	-500.
(	-500.0,	-400.0,	.0,	.0);	(	-500.0,	-300.
(	-500.0,	-200.0,	.0,	.0);	(	-500.0,	-100.
(	-500.0,	.0,	.0,	.0);	(	-500.0,	100.
(	-500.0,	200.0,	.0,	.0);	(	-500.0,	300.
(	-500.0,	400.0,	.0,	.0);	(	-500.0,	300.
(	-500.0,	200.0,	.0,	.0);	(	-500.0,	100.
(	-500.0,	200.0,	.0,	.0);	(	-500.0,	300.
(	-500.0,	400.0,	.0,	.0);	(	-500.0,	500.
(	-500.0,	600.0,	.0,	.0);	(	-500.0,	700.
(	-500.0,	800.0,	.0,	.0);	(	-500.0,	900.
(	-400.0,	-800.0,	.0,	.0);	(	-400.0,	-700.
(	-400.0,	-600.0,	.0,	.0);	(	-400.0,	-500.
(	-400.0,	-400.0,	.0,	.0);	(	-400.0,	-300.
(	-400.0,	-200.0,	.0,	.0);	(	-400.0,	-100.
(	-400.0,	.0,	.0,	.0);	(	-400.0,	100.
(	-400.0,	200.0,	.0,	.0);	(	-400.0,	300.
(	-400.0,	400.0,	.0,	.0);	(	-400.0,	500.
(	-400.0,	600.0,	.0,	.0);	(	-400.0,	700.
(	-400.0,	800.0,	.0,	.0);	(	-400.0,	900.
(	-300.0,	-800.0,	.0,	.0);	(	-300.0,	-700.
(	-300.0,	-600.0,	.0,	.0);	(	-300.0,	-500.
(	-300.0,	-400.0,	.0,	.0);	(	-300.0,	-300.
(	-300.0,	-200.0,	.0,	.0);	(	-300.0,	-100.
(	-300.0,	.0,	.0,	.0);	(	-300.0,	100.
(	-300.0,	200.0,	.0,	.0);	(	-300.0,	300.
(	-300.0,	400.0,	.0,	.0);	(	-300.0,	500.
(	-300.0,	600.0,	.0,	.0);	(	-300.0,	700.
(	-300.0,	800.0,	.0,	.0);	(	-300.0,	900.
(	-200.0,	-800.0,	.0,	.0);	(	-200.0,	-700.

\*\* ISCLT3 - VERSION 95250 \*\*\*

\*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\*\* MODELING OPTIONS USED: CONC RURAL FLAT DEFAULT

\*\*\* DISCRETE CARTESIAN RECEPTORS \*\*  
(X-COORD, Y-COORD, ZELEV, ZFLAG)  
(METERS)

(	-200.0,	-600.0,	.0,	.0);	(	-200.0,	-500.
)	-200.0,	-400.0,	.0,	.0);	)	-200.0,	-300.
(	-200.0,	-200.0,	.0,	.0);	(	-200.0,	-100.
)	-200.0,	.0,	.0,	.0);	)	-200.0,	100.
(	-200.0,	200.0,	.0,	.0);	(	-200.0,	300.
)	-200.0,	400.0,	.0,	.0);	)	-200.0,	500.
(	-200.0,	600.0,	.0,	.0);	(	-200.0,	700.
)	-200.0,	800.0,	.0,	.0);	)	-200.0,	900.
(	-100.0,	-800.0,	.0,	.0);	(	-100.0,	-700.
)	-100.0,	-600.0,	.0,	.0);	)	-100.0,	-500.
(	-100.0,	-400.0,	.0,	.0);	(	-100.0,	-300.
)	-100.0,	-200.0,	.0,	.0);	)	-100.0,	-100.
(	-100.0,	.0,	.0,	.0);	(	-100.0,	100.
)	-100.0,	200.0,	.0,	.0);	)	-100.0,	300.
(	-100.0,	400.0,	.0,	.0);	(	-100.0,	500.
)	-100.0,	600.0,	.0,	.0);	)	-100.0,	700.
(	-100.0,	800.0,	.0,	.0);	(	-100.0,	900.
)	.0,	-800.0,	.0,	.0);	)	.0,	-700.
(	.0,	-600.0,	.0,	.0);	(	.0,	-500.
)	.0,	-400.0,	.0,	.0);	)	.0,	-300.
(	.0,	-200.0,	.0,	.0);	(	.0,	-100.
)	.0,	-200.0,	.0,	.0);	)	.0,	-100.
(	.0,	.0,	.0,	.0);	(	.0,	100.
)	.0,	200.0,	.0,	.0);	)	.0,	300.
(	.0,	400.0,	.0,	.0);	(	.0,	500.
)	.0,	600.0,	.0,	.0);	)	.0,	700.
(	.0,	800.0,	.0,	.0);	(	.0,	900.
)	100.0,	-800.0,	.0,	.0);	(	100.0,	-700.
(	100.0,	-600.0,	.0,	.0);	(	100.0,	-500.
)	100.0,	-400.0,	.0,	.0);	(	100.0,	-300.
(	100.0,	-200.0,	.0,	.0);	(	100.0,	-100.
)	100.0,	.0,	.0,	.0);	(	100.0,	100.
(	100.0,	200.0,	.0,	.0);	(	100.0,	300.
)	100.0,	400.0,	.0,	.0);	(	100.0,	500.
(	100.0,	600.0,	.0,	.0);	(	100.0,	700.
)	100.0,	800.0,	.0,	.0);	(	100.0,	900.
(	200.0,	-800.0,	.0,	.0);	(	200.0,	-700.
)	200.0,	-600.0,	.0,	.0);	(	200.0,	-500.
(	200.0,	-400.0,	.0,	.0);	(	200.0,	-300.
)	200.0,	-200.0,	.0,	.0);	(	200.0,	-100.
(	200.0,	.0,	.0,	.0);	(	200.0,	100.
)	200.0,	200.0,	.0,	.0);	(	200.0,	300.
(	200.0,	400.0,	.0,	.0);	(	200.0,	500.
)	200.0,	600.0,	.0,	.0);	(	200.0,	700.
(	200.0,	800.0,	.0,	.0);	(	200.0,	900.

\*\*\* ISCLT3 - VERSION 95250 \*\*\*

\*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\*\* MODELING OPTIONS USED: CONC RURAL FLAT DEFAULT

\*\*\* DISCRETE CARTESIAN RECEPTORS \*\*  
(X-COORD, Y-COORD, ZELEV, ZFLAG)  
(METERS)

{ 300.0,	-800.0,	.0,	.0);	{ 300.0,	-700.
{ 300.0,	-600.0,	.0,	.0);	{ 300.0,	-500.
{ 300.0,	-400.0,	.0,	.0);	{ 300.0,	-300.
{ 300.0,	-200.0,	.0,	.0);	{ 300.0,	-100.
{ 300.0,	.0,	.0,	.0);	{ 300.0,	100.
{ 300.0,	200.0,	.0,	.0);	{ 300.0,	300.
{ 300.0,	400.0,	.0,	.0);	{ 300.0,	500.
{ 300.0,	600.0,	.0,	.0);	{ 300.0,	700.
{ 300.0,	800.0,	.0,	.0);	{ 300.0,	900.
{ 400.0,	-800.0,	.0,	.0);	{ 400.0,	-700.
{ 400.0,	-600.0,	.0,	.0);	{ 400.0,	-500.
{ 400.0,	-400.0,	.0,	.0);	{ 400.0,	-300.
{ 400.0,	-200.0,	.0,	.0);	{ 400.0,	-100.
{ 400.0,	.0,	.0,	.0);	{ 400.0,	100.
{ 400.0,	200.0,	.0,	.0);	{ 400.0,	300.
{ 400.0,	400.0,	.0,	.0);	{ 400.0,	500.
{ 400.0,	600.0,	.0,	.0);	{ 400.0,	700.
{ 400.0,	800.0,	.0,	.0);	{ 400.0,	900.
{ 500.0,	-800.0,	.0,	.0);	{ 500.0,	-700.
{ 500.0,	-600.0,	.0,	.0);	{ 500.0,	-500.
{ 500.0,	-400.0,	.0,	.0);	{ 500.0,	-300.
{ 500.0,	-200.0,	.0,	.0);	{ 500.0,	-100.
{ 500.0,	.0,	.0,	.0);	{ 500.0,	100.
{ 500.0,	200.0,	.0,	.0);	{ 500.0,	300.
{ 500.0,	400.0,	.0,	.0);	{ 500.0,	500.
{ 500.0,	600.0,	.0,	.0);	{ 500.0,	700.
{ 500.0,	800.0,	.0,	.0);	{ 500.0,	900.
{ 600.0,	-800.0,	.0,	.0);	{ 600.0,	-700.
{ 600.0,	-600.0,	.0,	.0);	{ 600.0,	-500.
{ 600.0,	-400.0,	.0,	.0);	{ 600.0,	-300.
{ 600.0,	-200.0,	.0,	.0);	{ 600.0,	-100.
{ 600.0,	.0,	.0,	.0);	{ 600.0,	100.
{ 600.0,	200.0,	.0,	.0);	{ 600.0,	300.
{ 600.0,	400.0,	.0,	.0);	{ 600.0,	500.
{ 600.0,	600.0,	.0,	.0);	{ 600.0,	700.
{ 600.0,	800.0,	.0,	.0);	{ 600.0,	900.
{ 700.0,	-700.0,	.0,	.0);	{ 700.0,	-600.
{ 700.0,	-500.0,	.0,	.0);	{ 700.0,	-400.
{ 700.0,	-300.0,	.0,	.0);	{ 700.0,	-200.
{ 700.0,	-100.0,	.0,	.0);	{ 700.0,	-
{ 700.0,	100.0,	.0,	.0);	{ 700.0,	200.
{ 700.0,	300.0,	.0,	.0);	{ 700.0,	400.
{ 700.0,	500.0,	.0,	.0);	{ 700.0,	600.
{ 700.0,	700.0,	.0,	.0);	{ 700.0,	800.

\*\*\* ISCLT3 - VERSION 95250 \*\*\*

\*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\*\* MODELING OPTIONS USED: CONC RURAL FLAT DEFAULT

\*\*\* DISCRETE CARTESIAN RECEPTORS \*\*  
(X-COORD, Y-COORD, ZELEV, ZFLAG)  
(METERS)

(	700.0,	900.0,	.0,	.0);	(	800.0,	-600.
(	800.0,	-500.0,	.0,	.0);	(	800.0,	-400.
(	800.0,	-300.0,	.0,	.0);	(	800.0,	-200.
(	800.0,	-100.0,	.0,	.0);	(	800.0,	.
(	800.0,	100.0,	.0,	.0);	(	800.0,	200.
(	800.0,	300.0,	.0,	.0);	(	800.0,	400.
(	800.0,	500.0,	.0,	.0);	(	800.0,	600.
(	800.0,	700.0,	.0,	.0);	(	800.0,	800.
(	900.0,	-300.0,	.0,	.0);	(	900.0,	-200.
(	900.0,	-100.0,	.0,	.0);	(	900.0,	.
(	900.0,	100.0,	.0,	.0);	(	900.0,	200.
(	900.0,	300.0,	.0,	.0);	(	900.0,	400.
(	900.0,	500.0,	.0,	.0);	(	900.0,	600.

\*\*\* ISCLT3 - VERSION 95250 \*\*\*      \*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\*\* MODELING OPTIONS USED: CONC RURAL FLAT      DFAULT

\* SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY  
LESS THAN 1.0 METER OR 3\*ZLB IN DISTANCE, OR WITHIN C

SOURCE ID	-- RECEPTOR LOCATION --	
	XR (METERS)	YR (METERS)
- - - - -	- - - - -	- - - - -
1	.0	.0

\*\*\* ISCLT3 - VERSION 95250 \*\*\*

\*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\*\* MODELING OPTIONS USED: CONC RURAL FLAT DEFAULT

\*\*\* AVERAGE SPEED FOR EACH WIND SPEED CA  
(METERS/SEC)

1.54, 3.09, 3.95, 5.14, 8.2

\*\*\* WIND PROFILE EXPONENTS \*\*

STABILITY CATEGORY	WIND SPEED CATEGORY			
	1	2	3	4
A	.70000E-01	.70000E-01	.70000E-01	.7000
B	.70000E-01	.70000E-01	.70000E-01	.7000
C	.10000E+00	.10000E+00	.10000E+00	.1000
D	.15000E+00	.15000E+00	.15000E+00	.1500
E	.35000E+00	.35000E+00	.35000E+00	.3500
F	.55000E+00	.55000E+00	.55000E+00	.5500

\*\*\* VERTICAL POTENTIAL TEMPERATURE GRA  
(DEGREES KELVIN PER METER)

STABILITY CATEGORY	WIND SPEED CATEGORY			
	1	2	3	4
A	.00000E+00	.00000E+00	.00000E+00	.0000
B	.00000E+00	.00000E+00	.00000E+00	.0000
C	.00000E+00	.00000E+00	.00000E+00	.0000
D	.00000E+00	.00000E+00	.00000E+00	.0000
E	.20000E-01	.20000E-01	.20000E-01	.2000
F	.35000E-01	.35000E-01	.35000E-01	.3500

\*\*\* AVERAGE AMBIENT AIR TEMPERATURE (KEL

STABILITY CATEGORY	STABILITY CATEGORY A	STABILITY CATEGORY B	STABILITY CATEGORY C	STABILITY CATEGORY D	C
ANNUAL	280.0000	280.0000	280.0000	280.0000	280.0000

\*\* ISCLT3 - VERSION 95250 \*\*\*

\*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\* MODELING OPTIONS USED: CONC RURAL FLAT DEFAULT

\*\*\* AVERAGE MIXING LAYER HEIGHT (METERS) \*\*

	WIND SPEED CATEGORY 1	WIND SPEED CATEGORY 2	WIND SPEED CATEGORY 3	ANNUAL WIND SPEED CATEGORY 4
STABILITY CATEGORY A	440.0000	440.0000	440.0000	440.0000
STABILITY CATEGORY B	440.0000	440.0000	440.0000	440.0000
STABILITY CATEGORY C	440.0000	440.0000	440.0000	440.0000
STABILITY CATEGORY D	440.0000	440.0000	440.0000	440.0000
STABILITY CATEGORY E	440.0000	440.0000	440.0000	440.0000
STABILITY CATEGORY F	440.0000	440.0000	440.0000	440.0000

\*\* ISCLT3 - VERSION 95250 \*\*\*

\*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\* MODELING OPTIONS USED: CONC RURAL FLAT DEFAULT

## \*\*\* FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY \*

FILE: METFIL.STR

SURFACE STATION NO.: 14827

FORMAT: FREE

UPPER AIR STATION NO.

NAME: SURFNAME

NAME

YEAR: 1985

YEAR

## ANNUAL: STABILITY CATEGORY A

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 ( 1.540 M/S)	WIND SPEED CATEGORY 2 ( 3.090 M/S)	WIND SPEED CATEGORY 3 ( 3.950 M/S)	WIND SPEED CATEGORY 4 ( 5.140 M/S)	WIND SPEED CATEGORY 5 ( 8.230 M/S)	W C
.000	.00000000	.00000000	.00000000	.00000000	.00000000	
22.500	.00000000	.00000000	.00000000	.00000000	.00000000	
45.000	.00000000	.00000000	.00000000	.00000000	.00000000	
67.500	.00000000	.00000000	.00000000	.00000000	.00000000	
90.000	.00000000	.00000000	.00000000	.00000000	.00000000	
112.500	.00000000	.00000000	.00000000	.00000000	.00000000	
135.000	.00000000	.00000000	.00000000	.00000000	.00000000	
157.500	.00000000	.00000000	.00000000	.00000000	.00000000	
180.000	.00000000	.00000000	.00000000	.00000000	.00000000	
202.500	.00000000	.00000000	.00000000	.00000000	.00000000	
225.000	.00000000	.00000000	.00000000	.00000000	.00000000	
247.500	.00000000	.00000000	.00000000	.00000000	.00000000	
270.000	.00000000	.00000000	.00000000	.00000000	.00000000	
292.500	.00000000	.00000000	.00000000	.00000000	.00000000	
315.000	.00000000	.00000000	.00000000	.00000000	.00000000	
337.500	.00000000	.00000000	.00000000	.00000000	.00000000	

## ANNUAL: STABILITY CATEGORY B

DIRECTION DEGREES)	WIND SPEED CATEGORY 1 ( 1.540 M/S)	WIND SPEED CATEGORY 2 ( 3.090 M/S)	WIND SPEED CATEGORY 3 ( 3.950 M/S)	WIND SPEED CATEGORY 4 ( 5.140 M/S)	WIND SPEED CATEGORY 5 ( 8.230 M/S)	W C
.000	.00000000	.00000000	.00000000	.00000000	.00000000	
22.500	.00000000	.00000000	.00000000	.00000000	.00000000	
45.000	.00000000	.00000000	.00000000	.00000000	.00000000	
67.500	.00000000	.00000000	.00000000	.00000000	.00000000	
90.000	.00000000	.00000000	.00000000	.00000000	.00000000	
112.500	.00000000	.00000000	.00000000	.00000000	.00000000	
135.000	.00000000	.00000000	.00000000	.00000000	.00000000	
157.500	.00000000	.00000000	.00000000	.00000000	.00000000	
180.000	.00000000	.00000000	.00000000	.00000000	.00000000	
202.500	.00000000	.00000000	.00000000	.00000000	.00000000	
225.000	.00000000	.00000000	.00000000	.00000000	.00000000	
247.500	.00000000	.00000000	.00000000	.00000000	.00000000	
270.000	.00000000	.00000000	.00000000	.00000000	.00000000	
292.500	.00000000	.00000000	.00000000	.00000000	.00000000	
315.000	.00000000	.00000000	.00000000	.00000000	.00000000	
337.500	.00000000	.00000000	.00000000	.00000000	.00000000	

\* \* ISCLT3 - VERSION 95250 \*\*\*      \*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\* \* MODELING OPTIONS USED: CONC RURAL FLAT      DEFAULT

\*\*\* FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY \*

FILE: METFIL.STR

FORMAT: FREE

SURFACE STATION NO.: 14827

UPPER AIR STATION NO.

NAME: SURFNAME

NAME

YEAR: 1985

YEAR

ANNUAL: STABILITY CATEGORY C

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 ( 1.540 M/S)	WIND SPEED CATEGORY 2 ( 3.090 M/S)	WIND SPEED CATEGORY 3 ( 3.950 M/S)	WIND SPEED CATEGORY 4 ( 5.140 M/S)	WIND SPEED CATEGORY 5 ( 8.230 M/S)	W (1)
.000	.00000000	.00000000	.00000000	.00000000	.00000000	.00000000
22.500	.00000000	.00000000	.00000000	.00000000	.00000000	.00000000
45.000	.00000000	.00000000	.00000000	.00000000	.00000000	.00000000
67.500	.00000000	.00000000	.00000000	.00000000	.00000000	.00000000
90.000	.00000000	.00000000	.00000000	.00000000	.00000000	.00000000
112.500	.00000000	.00000000	.00000000	.00000000	.00000000	.00000000
135.000	.00000000	.00000000	.00000000	.00000000	.00000000	.00000000
157.500	.00000000	.00000000	.00000000	.00000000	.00000000	.00000000
180.000	.00000000	.00000000	.00000000	.00000000	.00000000	.00000000
202.500	.00000000	.00000000	.00000000	.00000000	.00000000	.00000000
225.000	.00000000	.00000000	.00000000	.00000000	.00000000	.00000000
247.500	.00000000	.00000000	.00000000	.00000000	.00000000	.00000000
270.000	.00000000	.00000000	.00000000	.00000000	.00000000	.00000000
292.500	.00000000	.00000000	.00000000	.00000000	.00000000	.00000000
315.000	.00000000	.00000000	.00000000	.00000000	.00000000	.00000000
337.500	.00000000	.00000000	.00000000	.00000000	.00000000	.00000000

ANNUAL: STABILITY CATEGORY D

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 ( 1.540 M/S)	WIND SPEED CATEGORY 2 ( 3.090 M/S)	WIND SPEED CATEGORY 3 ( 3.950 M/S)	WIND SPEED CATEGORY 4 ( 5.140 M/S)	WIND SPEED CATEGORY 5 ( 8.230 M/S)	W (1)
.000	.00067300	.00807100	.01059300	.00588500	.00000000	.00000000
22.500	.00056000	.00739800	.00420300	.00218600	.00000000	.00000000
45.000	.00056000	.00504400	.00689400	.00353100	.00000000	.00000000
67.500	.00056000	.00739800	.01193800	.00655700	.00067300	.00067300
90.000	.00201800	.01412300	.02135300	.01227400	.00100900	.00100900
112.500	.00168100	.00739800	.00723000	.00252200	.00000000	.00000000
135.000	.00302600	.00874300	.00588500	.00151300	.00000000	.00000000
157.500	.00302600	.01008800	.00674200	.00151300	.00000000	.00000000
180.000	.00403500	.01345100	.01462800	.00689400	.00050400	.00050400
202.500	.00269000	.01244200	.01368600	.00790200	.00084100	.00084100
225.000	.00336300	.01513200	.02377400	.01731800	.00302600	.00302600
247.500	.00201800	.01042400	.01704900	.01395500	.00336300	.00336300
270.000	.00168100	.01412300	.02209300	.02471600	.00605300	.00605300
292.500	.00067300	.00773400	.01025600	.00790200	.00067300	.00067300
315.000	.00067300	.00739800	.01025600	.00823900	.00067300	.00067300
337.500	.00067300	.00739800	.00958400	.00622100	.00033600	.00033600

\*\*\* ISCLT3 - VERSION 95250 \*\*\*

\*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\*\* MODELING OPTIONS USED: CONC RURAL FLAT

DEFAULT

\*\*\* FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY \*

FILE: METFIL.STR

FORMAT: FREE

SURFACE STATION NO.: 14827

UPPER AIR STATION NO.

NAME: SURFNAME

NAME

YEAR: 1985

YEAR

## ANNUAL: STABILITY CATEGORY E

DIRECTION 'DEGREES)	WIND SPEED CATEGORY 1 ( 1.540 M/S)	WIND SPEED CATEGORY 2 ( 3.090 M/S)	WIND SPEED CATEGORY 3 ( 3.950 M/S)	WIND SPEED CATEGORY 4 ( 5.140 M/S)	WIND SPEED CATEGORY 5 ( 8.230 M/S)	W C ( 1 -
.000	.00029200	.00350200	.00459700	.00255400	.00000000	
22.500	.00024300	.00321000	.00182400	.00094900	.00000000	
45.000	.00024300	.00218900	.00299200	.00153200	.00000000	
67.500	.00024300	.00321000	.00518000	.00284600	.00029200	
90.000	.00087600	.00612900	.00926700	.00532600	.00043800	
112.500	.00073000	.00321000	.00313700	.00109400	.00000000	
135.000	.00131300	.00379400	.00255400	.00065700	.00000000	
157.500	.00131300	.00437800	.00292600	.00065700	.00000000	
180.000	.00175100	.00583700	.00634800	.00299200	.00021900	
202.500	.00116700	.00539900	.00593900	.00342900	.00036500	
225.000	.00145900	.00656700	.01031700	.00751500	.00131300	
247.500	.00087600	.00452400	.00739900	.00605600	.00145900	
270.000	.00073000	.00612900	.00958800	.01072600	.00262700	
292.500	.00029200	.00335600	.00445100	.00342900	.00029200	
315.000	.00029200	.00321000	.00445100	.00357500	.00029200	
337.500	.00029200	.00321000	.00415900	.00270000	.00014600	

## ANNUAL: STABILITY CATEGORY F

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 ( 1.540 M/S)	WIND SPEED CATEGORY 2 ( 3.090 M/S)	WIND SPEED CATEGORY 3 ( 3.950 M/S)	WIND SPEED CATEGORY 4 ( 5.140 M/S)	WIND SPEED CATEGORY 5 ( 8.230 M/S)	W C ( 1 -
.000	.00030500	.00365500	.00479700	.00266500	.00000000	
22.500	.00025400	.00335000	.00190300	.00099000	.00000000	
45.000	.00025400	.00228400	.00312200	.00159900	.00000000	
67.500	.00025400	.00335000	.00540600	.00296900	.00030500	
90.000	.00091400	.00639600	.00966900	.00555800	.00045700	
112.500	.00076100	.00335000	.00327400	.00114200	.00000000	
135.000	.00137000	.00395900	.00266500	.00068500	.00000000	
157.500	.00137000	.00456800	.00305300	.00068500	.00000000	
180.000	.00182700	.00609100	.00662400	.00312200	.00022800	
202.500	.00121800	.00563400	.00619800	.00357800	.00038100	
225.000	.00152300	.00685200	.01076600	.00784200	.00137000	
247.500	.00091400	.00472000	.00772000	.00631900	.00152300	
270.000	.00076100	.00639600	.01000400	.01119200	.00274100	
292.500	.00030500	.00350200	.00464400	.00357800	.00030500	
315.000	.00030500	.00335000	.00464400	.00373100	.00030500	
337.500	.00030500	.00335000	.00434000	.00281700	.00015200	

SUM OF FREQUENCIES, FTOTAL = .99381

\*\*\* ISCLT3 - VERSION 95250 \*\*\*

\*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\*\* MODELING OPTIONS USED: CONC RURAL FLAT DEFAULT

\*\*\* THE ANNUAL AVERAGE CONCENTRATION VALUES FOR  
INCLUDING SOURCE(S): 1 ,

\*\*\* DISCRETE CARTESIAN RECEPTOR PCI

\*\* CONC OF OTHER IN (MICROGRAMS/CUBIC

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)
-241.00	116.00	.009316	-239.00
-239.00	-45.00	.019247	-239.00
-239.00	35.00	.018958	-239.00
-204.00	-86.00	.013180	-198.00
-169.00	-86.00	.010928	-155.00
-134.00	-86.00	.007475	-112.00
-89.00	-91.00	.003213	-70.00
-69.00	144.00	.006313	-68.00
-45.00	-95.00	.001210	-27.00
-1.00	-99.00	.001800	16.00
43.00	-103.00	.003187	59.00
70.00	-111.00	.005509	97.00
102.00	183.00	.020349	102.00
123.00	-133.00	.011355	142.00
149.00	-146.00	.012918	182.00
184.00	-145.00	.013191	202.00
209.00	-116.00	.013247	215.00
221.00	-31.00	.025667	222.00
227.00	7.00	.032258	223.00
242.00	91.00	.023422	251.00
260.00	181.00	.025157	262.00
264.00	232.00	.025917	-900.00
-900.00	-700.00	.002927	-900.00
-900.00	-500.00	.003943	-900.00
-900.00	-300.00	.005665	-900.00
-900.00	-100.00	.008457	-900.00
-900.00	100.00	.008129	-900.00
-900.00	300.00	.004771	-900.00
-900.00	500.00	.003555	-900.00
-900.00	700.00	.003315	-900.00
-900.00	900.00	.003028	-800.00
-800.00	-700.00	.002913	-800.00
-800.00	-500.00	.004093	-800.00
-800.00	-300.00	.005869	-800.00
-800.00	-100.00	.009370	-800.00
-800.00	100.00	.008947	-800.00
-800.00	300.00	.004738	-800.00
-800.00	500.00	.003946	-800.00
-800.00	700.00	.003616	-800.00
-800.00	900.00	.003270	-700.00

\*\*\* ISCLT3 - VERSION 95250 \*\*\*

\*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\*\* MODELING OPTIONS USED: CONC RURAL FLAT DEFAULT

\*\*\* THE ANNUAL AVERAGE CONCENTRATION VALUES FOR  
INCLUDING SOURCE(S): 1

\*\*\* DISCRETE CARTESIAN RECEPTOR POI

\*\* CONC OF OTHER IN (MICROGRAMS/CUBIC

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)
-700.00	-700.00	.002837	-700.00
-700.00	-500.00	.004189	-700.00
-700.00	-300.00	.006057	-700.00
-700.00	-100.00	.010420	-700.00
-700.00	100.00	.009859	-700.00
-700.00	300.00	.004724	-700.00
-700.00	500.00	.004397	-700.00
-700.00	700.00	.003949	-700.00
-700.00	900.00	.003527	-600.00
-600.00	-700.00	.003036	-600.00
-600.00	-500.00	.004188	-600.00
-600.00	-300.00	.006458	-600.00
-600.00	-100.00	.011580	-600.00
-600.00	100.00	.010808	-600.00
-600.00	300.00	.005380	-600.00
-600.00	500.00	.004911	-600.00
-600.00	300.00	.005380	-600.00
-600.00	600.00	.004621	-600.00
-600.00	800.00	.004060	-600.00
-500.00	-800.00	.002900	-500.00
-500.00	-600.00	.003601	-500.00
-500.00	-400.00	.005218	-500.00
-500.00	-200.00	.008743	-500.00
-500.00	.00	.017213	-500.00
-500.00	200.00	.006715	-500.00
-500.00	400.00	.005846	-500.00
-500.00	200.00	.006715	-500.00
-500.00	400.00	.005846	-500.00
-500.00	600.00	.005127	-500.00
-500.00	800.00	.004408	-500.00
-400.00	-800.00	.003025	-400.00
-400.00	-600.00	.003835	-400.00
-400.00	-400.00	.004952	-400.00
-400.00	-200.00	.009255	-400.00
-400.00	.00	.020561	-400.00
-400.00	200.00	.007474	-400.00
-400.00	400.00	.006624	-400.00
-400.00	600.00	.005677	-400.00
-400.00	800.00	.004765	-400.00

\*\*\* ISCLT3 - VERSION 95250 \*\*\*

\*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\*\* MODELING OPTIONS USED: CONC RURAL FLAT DEFAULT

\*\*\* THE ANNUAL AVERAGE CONCENTRATION VALUES FOR  
INCLUDING SOURCE(S): 1

\*\*\* DISCRETE CARTESIAN RECEPTOR POI

\*\* CONC OF OTHER IN (MICROGRAMS/CUBIC

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)
-300.00	-800.00	.003316	-300.00
-300.00	-600.00	.004027	-300.00
-300.00	-400.00	.005368	-300.00
-300.00	-200.00	.009348	-300.00
-300.00	.00	.024357	-300.00
-300.00	200.00	.008639	-300.00
-300.00	400.00	.007534	-300.00
-300.00	600.00	.006251	-300.00
-300.00	800.00	.005392	-300.00
-200.00	-800.00	.004059	-200.00
-200.00	-600.00	.004703	-200.00
-200.00	-400.00	.005696	-200.00
-200.00	-200.00	.007920	-200.00
-200.00	.00	.023386	-200.00
-200.00	200.00	.009527	-200.00
-200.00	400.00	.008564	-200.00
-200.00	600.00	.007572	-200.00
-200.00	800.00	.006679	-200.00
-100.00	-800.00	.004824	-100.00
-100.00	-600.00	.006024	-100.00
-100.00	-400.00	.007492	-100.00
-100.00	-200.00	.007056	-100.00
-100.00	.00	.004122	-100.00
-100.00	200.00	.009661	-100.00
-100.00	400.00	.011791	-100.00
-100.00	600.00	.009842	-100.00
-100.00	800.00	.008017	-100.00
.00	-800.00	.005559	.00
.00	-600.00	.007343	.00
.00	-400.00	.010323	.00
.00	-200.00	.011686	.00
.00	-200.00	.011686	.00
.00	.00	.000000	.00
.00	200.00	.017497	.00
.00	400.00	.016600	.00
.00	600.00	.012147	.00
.00	800.00	.009317	.00
100.00	-800.00	.005428	100.00
100.00	-600.00	.007086	100.00
100.00	-400.00	.009733	100.00

\*\* ISCLT3 - VERSION 95250 \*\*\*

\*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\*\* MODELING OPTIONS USED: CONC RURAL FLAT DEFAULT

\*\*\* THE ANNUAL AVERAGE CONCENTRATION VALUES FOR  
INCLUDING SOURCE(S): 1

\*\*\* DISCRETE CARTESIAN RECEPTOR POI

\*\* CONC OF OTHER IN (MICROGRAMS/CUBIC

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)
100.00	-200.00	.011923	100.00
100.00	.00	.007042	100.00
100.00	200.00	.019802	100.00
100.00	400.00	.015498	100.00
100.00	600.00	.011588	100.00
100.00	800.00	.009006	100.00
200.00	-800.00	.005219	200.00
200.00	-600.00	.006699	200.00
200.00	-400.00	.009144	200.00
200.00	-200.00	.013223	200.00
200.00	.00	.031916	200.00
200.00	200.00	.030070	200.00
200.00	400.00	.015798	200.00
200.00	600.00	.010848	200.00
200.00	800.00	.008577	200.00
300.00	-800.00	.004950	300.00
300.00	-600.00	.006397	300.00
300.00	-400.00	.008718	300.00
300.00	-200.00	.011626	300.00
300.00	.00	.031605	300.00
300.00	200.00	.023039	300.00
300.00	400.00	.018028	300.00
300.00	600.00	.011207	300.00
300.00	800.00	.008063	300.00
400.00	-800.00	.004780	400.00
400.00	-600.00	.006156	400.00
400.00	-600.00	.006156	400.00
400.00	-400.00	.008112	400.00
400.00	-200.00	.009952	400.00
400.00	.00	.026241	400.00
400.00	200.00	.017838	400.00
400.00	400.00	.018785	400.00
400.00	600.00	.012226	400.00
400.00	800.00	.008431	400.00
500.00	-800.00	.004623	500.00
500.00	-600.00	.005829	500.00
500.00	-400.00	.007239	500.00
500.00	-200.00	.008877	500.00
500.00	.00	.021792	500.00
500.00	200.00	.014526	500.00

\*\*\* ISCLT3 - VERSION 95250 \*\*\*

\*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\*\* MODELING OPTIONS USED: CONC RURAL FLAT DEFAULT

\*\*\* THE ANNUAL AVERAGE CONCENTRATION VALUES FOR  
INCLUDING SOURCE(S): 1

\*\*\* DISCRETE CARTESIAN RECEPTOR POI

\*\* CONC OF OTHER IN (MICROGRAMS/CUBIC

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)
500.00	400.00	.015504	500.00
500.00	600.00	.012684	500.00
500.00	800.00	.008978	500.00
600.00	-800.00	.004424	600.00
600.00	-600.00	.005460	600.00
600.00	-400.00	.006470	600.00
600.00	-200.00	.009191	600.00
600.00	0.00	.018475	600.00
600.00	200.00	.013327	600.00
600.00	400.00	.012965	600.00
600.00	600.00	.012726	600.00
600.00	800.00	.009268	600.00
700.00	-700.00	.004617	700.00
700.00	-500.00	.005398	700.00
700.00	-300.00	.006136	700.00
700.00	-100.00	.012475	700.00
700.00	100.00	.014116	700.00
700.00	300.00	.010481	700.00
700.00	500.00	.011119	700.00
700.00	700.00	.010780	700.00
700.00	900.00	.008193	800.00
800.00	-500.00	.004892	800.00
800.00	-300.00	.006101	800.00
800.00	-100.00	.011270	800.00
800.00	100.00	.012533	800.00
800.00	300.00	.009528	800.00
800.00	500.00	.009592	800.00
800.00	700.00	.009529	800.00
900.00	-300.00	.006089	900.00
900.00	-100.00	.010204	900.00
900.00	100.00	.011200	900.00
900.00	300.00	.008836	900.00
900.00	500.00	.008345	900.00

\*\*\* ISCLT3 - VERSION 95250 \*\*\*

\*\*\* Fort Wayne Reclamation Site, 30 ft stack  
\*\*\*

\*\*\* MODELING OPTIONS USED: CONC RURAL FLAT

DFAULT

\*\*\* Message Summary : ISCLT3 Model Execution \*\*\*

----- Summary of Total Messages -----

A Total of 0 Fatal Error Message(s)  
A Total of 0 Warning Message(s)  
A Total of 0 Informational Message(s)

\*\*\*\*\* FATAL ERROR MESSAGES \*\*\*\*\*

\*\*\* NONE \*\*\*

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

\*\*\* NONE \*\*\*

\*\*\*\*\*

\*\*\* ISCLT3 Finishes Successfully \*\*\*

\*\*\*\*\*

**APPENDIX B**

**LANDFILL SAMPLING DATA**

**Table 1**  
**Wayne Reclamation and Recycling Facility**  
**City of Columbia City**  
**Groundwater Monitoring Program**

Parameter	Units	MCL <sup>1</sup>	MDL <sup>2</sup>	GM-1														
				Jun-95	Jan-96	Jun-96	Jan-97	Jun-97	Dec-97	Jun-98	Jan-99	Jun-99	Dec-99	Jun-00	Dec-00	Jun-01	Oct-01	Apr-02
<b>Inorganics</b>																		
Ammonia	mg/l	--	0.05	0.43	0.6	0.58	0.25	0.41	0.28	1.7	0.587	0.45	0.48	1.08	1.20	1.41	1.09	1.14
Chloride	mg/l	250 (S)	1	130	120	80	48	39	35	80	64	31	37	26	23	46	39	44
Chemical Oxygen Demand (COD)	mg/l	--	1	130	55	87	100	39	25	38	74	22	36	27	45	13	29	52
Sodium	mg/l	--	0.10	60	59	54	26	22	19	18	22.8	18	15	19.2	17.5	19.0	22.9	22.2
<b>Volatile Organic Compounds</b>																		
2-Butanone (Methyl ethyl ketone)	ug/l	--	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10	
1,1-Dichloroethane	ug/l	--	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<1.0	<1.0	<1.0	
1,1-Dichloroethene	ug/l	7	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<5	<0.5	<0.5	<0.5	
cis-1,2-Dichloroethene	ug/l	70	0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<1.0	<5	<0.5	<0.5	<0.5	
trans-1,2-Dichloroethene	ug/l	100	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<1.0	<1.0	<1.0	
1,2-Dichloropropane	ug/l	5	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<5.0	<1.0	<1.0	
1,1,1-Trichloroethane	ug/l	200	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<1.0	<1.0	<1.0	
1,1,2-Trichloroethane	ug/l	5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<5	<0.5	<0.5	<0.5	
Trichloroethene	ug/l	5	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<1.0	<1.0	<1.0	
Vinyl Chloride	ug/l	2	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<1.0	<2	<1.0	<1.0	<1.0	
<b>Field Parameters</b>																		
pH	S.U.	6.5-8.5 (S)	--	--	--	--	--	--	--	--	--	--	--	6.90	7.58	6.94	7.49	7.55
Specific Conductance	umhos/cm	--	--	--	--	--	--	--	--	--	--	--	--	700	832	784	541	730
Temperature	oC	--	--	--	--	--	--	--	--	--	--	--	--	11.1	12.9	10.2	11.9	11.3
Turbidity	NTU	--	--	--	--	--	--	--	--	--	--	--	--	--	111	455	133	182

All other VOCs have been historically below laboratory detection limits.

<sup>1</sup> = U.S. EPA Maximum Contaminant Level

<sup>2</sup> = Current Laboratory Method Detection Limit

(S) = Secondary U.S. EPA MCL

Duplicate samples collected at GM-4.

**Table 1 (continued)**  
**Wayne Reclamation and Recycling Facility**  
**City of Columbia City**  
**Groundwater Monitoring Program**

Parameter	Units	MCL <sup>1</sup>	MDL <sup>2</sup>	GM-2														
				Jun-95	Jan-96	Jun-96	Jan-97	Jun-97	Dec-97	Jun-98	Jan-99	Jun-99	Dec-99	Jun-00	Dec-00	Jun-01	Oct-01	Apr-02
<b>Inorganics</b>																		
Ammonia	mg/l	—	0.05	2.6	2.6	2.4	1.6	3	2.6	3	2.64	1.7	1.8	1.99	1.80	2.03	2.10	1.46
Chloride	mg/l	250 (S)	1	18	15	19	16	16	22	19	10	7	12	16	10	12	14	20
Chemical Oxygen Demand (COD)	mg/l	—	1	30	<20	<20	<20	<20	<20	20	38	15	<15	17	8	<1	18	26
Sodium	mg/l	—	0.10	20	15	17	16	13	19	10	11.2	10.1	12.3	12.1	10.5	11.3	14.4	14.4
<b>Volatile Organic Compounds</b>																		
2-Butanone (Methyl ethyl ketone)	ug/l	—	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10	
1,1-Dichloroethane	ug/l	—	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<1.0	<1.0	<1.0	
1,1-Dichloroethene	ug/l	7	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<5	<0.5	<0.5	<0.5	
cis-1,2-Dichloroethene	ug/l	70	0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<1.0	<5	<0.5	<0.5	<0.5	
trans-1,2-Dichloroethene	ug/l	100	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<1.0	<1.0	<1.0	
1,2-Dichloropropane	ug/l	5	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<1.0	<1.0	
1,1,1-Trichloroethane	ug/l	200	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<1.0	<1.0	<1.0	
1,1,2-Trichloroethane	ug/l	5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<5	<0.5	<0.5	<0.5	
Trichloroethene	ug/l	5	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<1.0	<1.0	<1.0	
Vinyl Chloride	ug/l	2	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<2	<1.0	<1.0	<1.0	
<b>Field Parameters</b>																		
pH	S.U.	6.5-8.5 (S)	—	—	—	—	—	—	—	—	—	—	—	7.13	7.65	7.06	7.59	7.41
Specific Conductance	umhos/cm	—	—	—	—	—	—	—	—	—	—	—	—	700	818	715	524	936
Temperature	oC	—	—	—	—	—	—	—	—	—	—	—	—	11.3	12.9	10.6	11.4	10.2
Turbidity	NTU	—	—	—	—	—	—	—	—	—	—	—	—	—	9	13	22	10.5

All other VOCs have been historically below laboratory detection limits.

<sup>1</sup> = U.S. EPA Maximum Contaminant Level

<sup>2</sup> = Current Laboratory Method Detection Limit

(S) = Secondary U.S. EPA MCL

Duplicate samples collected at GM-4.

**Table 1 (continued)**  
**Wayne Reclamation and Recycling Facility**  
**City of Columbia City**  
**Groundwater Monitoring Program**

Parameter	Units	MCL <sup>1</sup>	MDL <sup>2</sup>	GM-3														
				Jun-95	Jan-96	Jun-96	Jan-97	Jun-97	Dec-97	Jun-98	Jan-99	Jun-99	Dec-99	Jun-00	Dec-00	Jun-01	Oct-01	Apr-02
<b>Inorganics</b>																		
Ammonia	mg/l	--	0.05	6	4.9	3.2	0.98	1.4	1	1.4	1.15	0.6	0.8	0.59	0.79	0.52	0.62	0.51
Chloride	mg/l	250 (S)	1	23	14	25	32	20	40	25	42	24	20	29	44	22	28	24
Chemical Oxygen Demand (COD)	mg/l	--	1	120	80	38	33	<20	<20	25	24	22	<15	28	10	14	18	22
Sodium	mg/l	--	0.10	26	14	14	17	11	16	10	19.2	16.4	16.5	17.7	21.5	15.8	15.0	12.2
<b>Volatile Organic Compounds</b>																		
2-Butanone (Methyl ethyl ketone)	ug/l	--	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10	<10
1,1-Dichloroethane	ug/l	--	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	ug/l	7	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	ug/l	70	0.5	84	33	26	17	17	36	94	51	85.6	60.7	110	82	61	150	85
trans-1,2-Dichloroethene	ug/l	100	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.6	0.9	<0.5	<1.0	<5	<1.0	<1.0	1	<1.0
1,2-Dichloropropane	ug/l	5	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<1.0	<1.0
1,1,1-Trichloroethane	ug/l	200	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	ug/l	5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	ug/l	5	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<5	<1.0	<1.0	<1.0	<1.0
Vinyl Chloride	ug/l	2	1	10	<1.0	18	42	33	45	32	22.6	22.3	16.6	26	28	24	54	33
<b>Field Parameters</b>																		
pH	S.U.	6.5-8.5 (S)	--	--	--	--	--	--	--	--	--	--	--	7.74	7.88	7.08	7.99	6.89
Specific Conductance	umhos/cm	--	--	--	--	--	--	--	--	--	--	--	--	630	615	767	382	635
Temperature	oC	--	--	--	--	--	--	--	--	--	--	--	--	16.9	13.4	12	8.5	14.6
Turbidity	NTU	--	--	--	--	--	--	--	--	--	--	--	--	-	45	34	13	30.8

All other VOCs have been historically below laboratory detection limits.

<sup>1</sup> = U.S. EPA Maximum Contaminant Level

<sup>2</sup> = Current Laboratory Method Detection Limit

(S) = Secondary U.S. EPA MCL

Duplicate samples collected at GM-4.

**Table 1 (continued)**  
**Wayne Reclamation and Recycling Facility**  
**City of Columbia City**  
**Groundwater Monitoring Program**

Parameter	Units	MCL <sup>1</sup>	MDL <sup>2</sup>	GM-4															
				Jun-95	Jan-96	Jun-96	Jan-97	Jun-97	Dec-97	Jun-98	Jan-99	Jun-99	Dec-99	Jun-00	Dec-00	Jun-01	Oct-01	Apr-02	
<b>Inorganics</b>																			
Ammonia	mg/l	—	0.05	0.37	0.33	0.34	0.28	0.13	0.37	3.1	0.697	0.29	0.24	0.32	0.46	0.36	0.33	0.29	
Chloride	mg/l	250 (S)	1	23	41	12	8.3	11	11	12	16	4.5	19	7	8	5	6	9	
Chemical Oxygen Demand (COD)	mg/l	—	1	220	65	47	55	20	<20	20	20	20	<15	13	2	6	28	13	
Sodium	mg/l	—	0.10	31	41	22	25	18	26	25	40	21	12	17.6	27.8	14.6	15.1	10.2	
<b>Volatile Organic Compounds</b>																			
2-Butanone (Methyl ethyl ketone)	ug/l	—	10	<10	150	<10	<10	<10	<10	<10	<10	<10	<33.3	<50	<10	<10	<10	<10	
1,1-Dichloroethane	ug/l	—	1	<1.0	<1.0	<1.0	<1.0	10	12	13	11	16	14	13	19	18	21	25	
1,1-Dichloroethene	ug/l	7	0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5	3.2	5.2	5	3.7	<5	4.2	7.0	7.1	
cis-1,2-Dichloroethene	ug/l	70	0.5	130	140	190	260	250	320	250	323	243	250	190	270	570	250	230	
trans-1,2-Dichloroethene	ug/l	100	1	<1.0	<1.0	<1.0	<1.0	12	14	16	13	16.3	13	14	13	14	18	20	
1,2-Dichloropropane	ug/l	5	5	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<3.3	<5.0	<5.0	6	<1.0	
1,1,1-Trichloroethane	ug/l	200	1	180	<1.0	200	140	140	210	180	144	193	143	170	210	610	260	330	
1,1,2-Trichloroethane	ug/l	5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<3.3	<5	<0.5	0.8	0.9	
Trichloroethylene	ug/l	5	1	410	380	530	280	430	490	500	462	556	435	440	640	1,900	860	870	
Vinyl Chloride	ug/l	2	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.8	5.2	3.7	4.9	4	8	6	7	
<b>Field Parameters</b>																			
pH	S.U.	6.5-8.5 (S)	—	—	—	—	—	—	—	—	—	—	—	—	7.34	7.02	6.99	7.51	7.23
Specific Conductance	umhos/cm	—	—	—	—	—	—	—	—	—	—	—	—	—	690	964	1,141	553	880
Temperature	oC	—	—	—	—	—	—	—	—	—	—	—	—	—	15.2	12.9	11.9	10.8	12.1
Turbidity	NTU	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13	21	29	22.9
																			17.4

All other VOCs have been historically below laboratory detection limits.

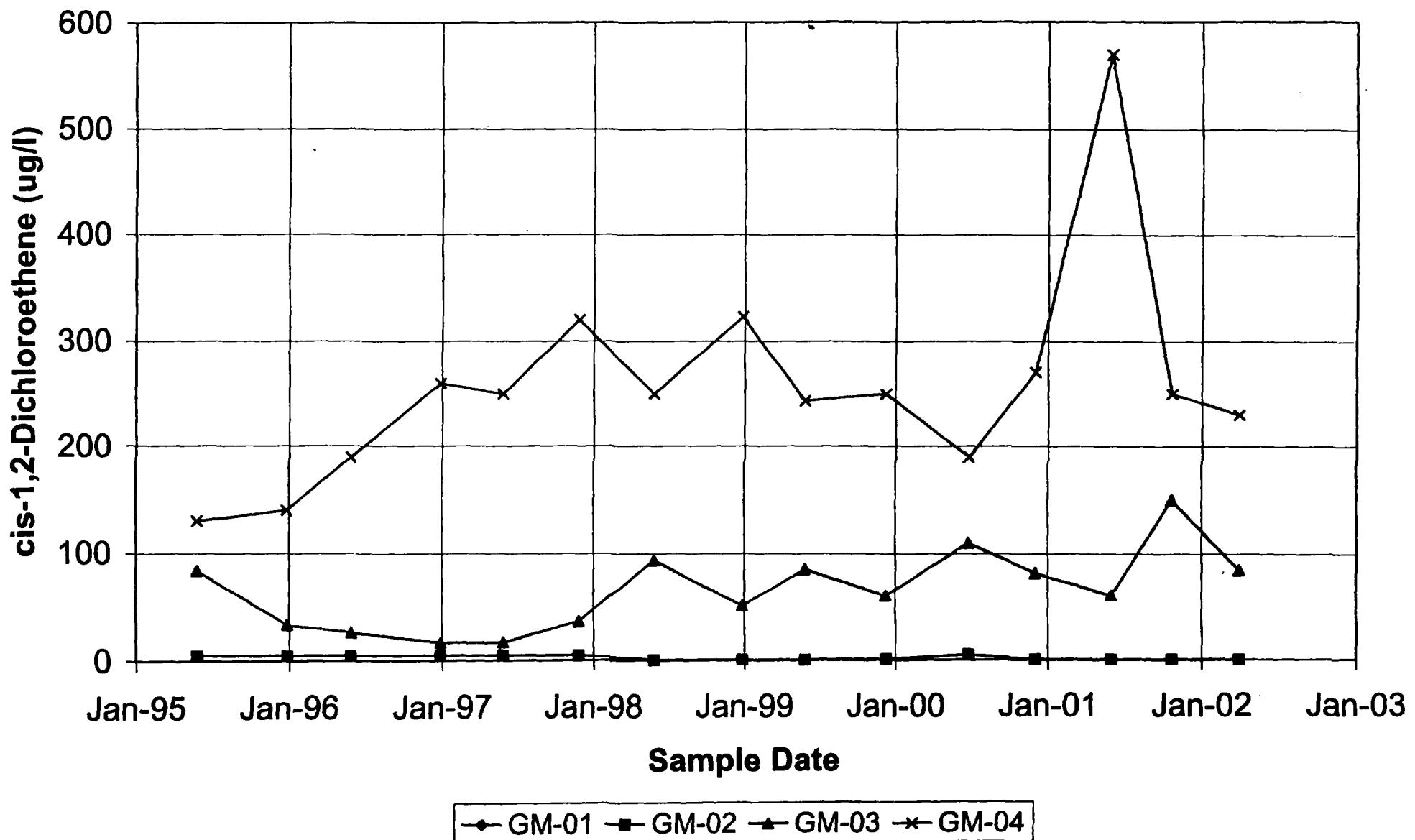
<sup>1</sup> = U.S. EPA Maximum Contaminant Level

<sup>2</sup> = Current Laboratory Method Detection Limit

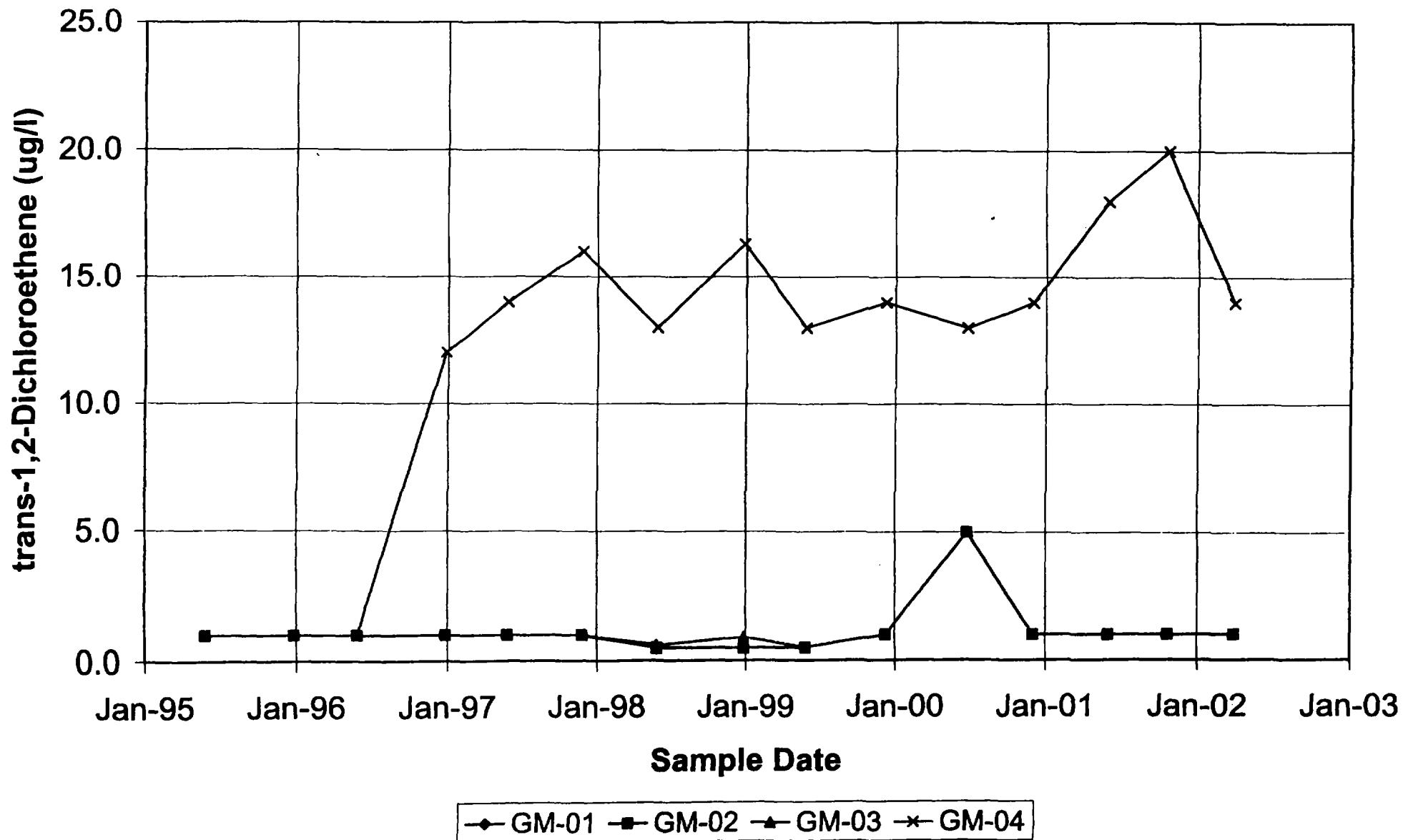
(S) = Secondary U.S. EPA MCL

Duplicate samples collected at GM-4.

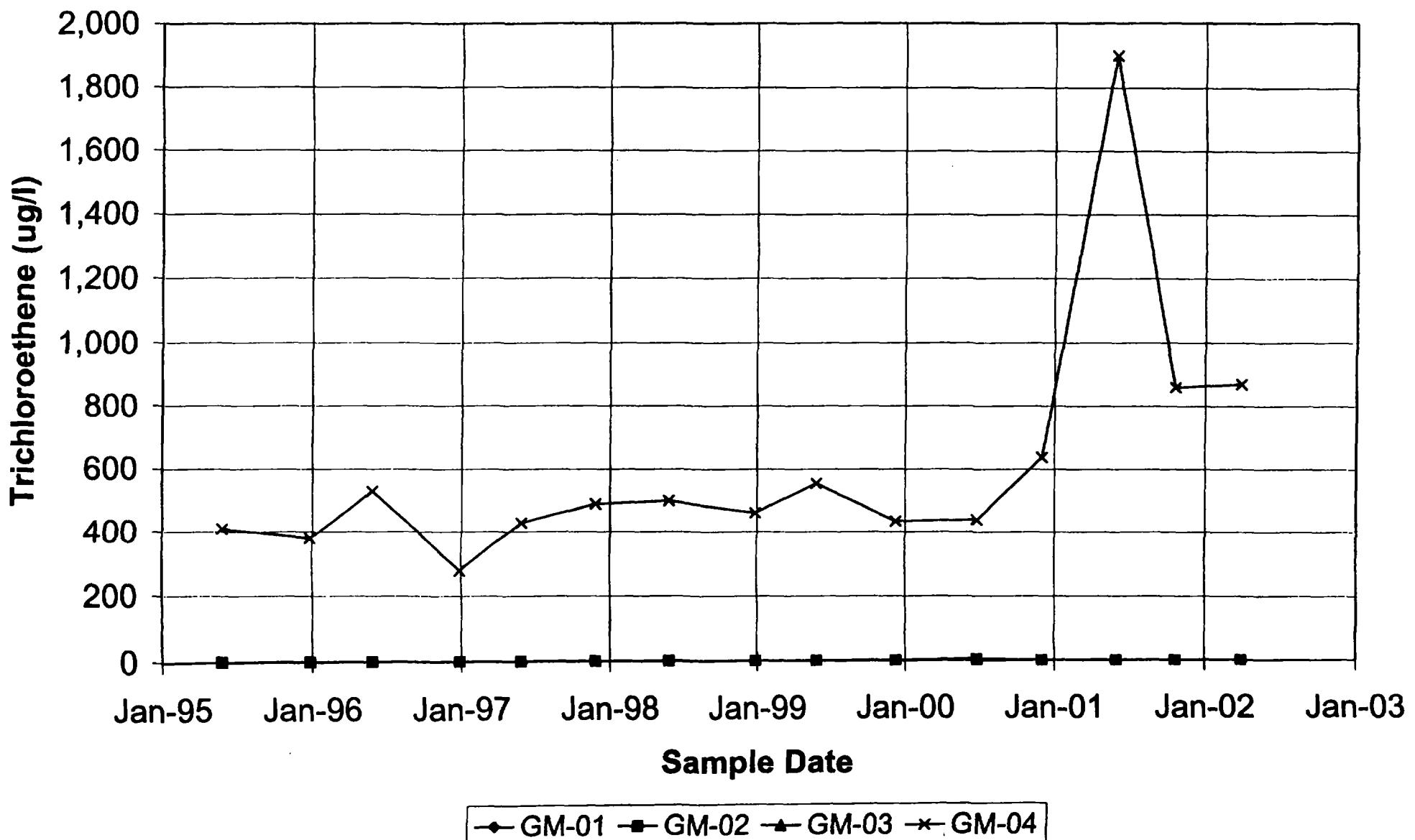
**cis-1,2-Dichloroethene Groundwater Concentrations  
WRR Facility, Columbia City, IN**



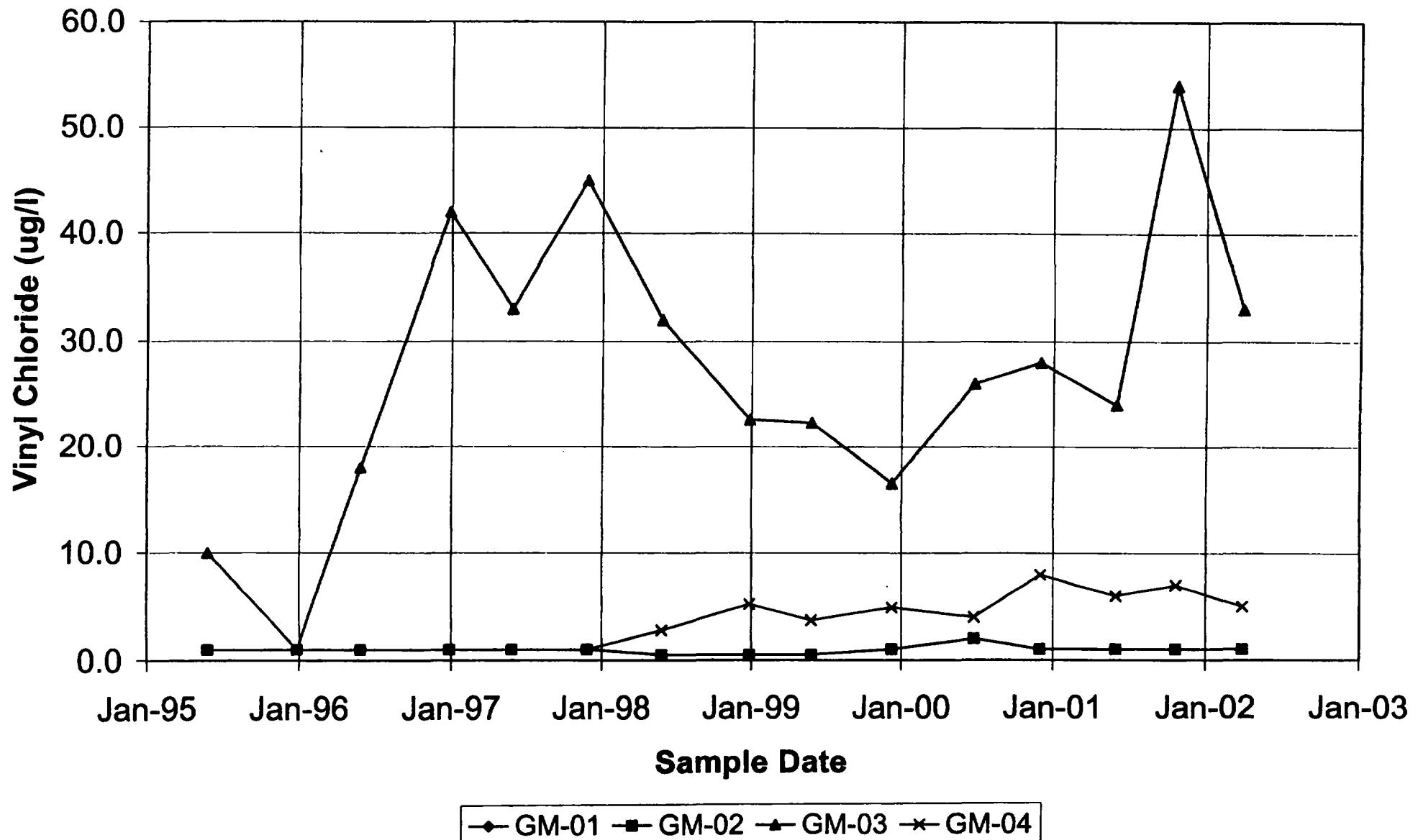
**trans-1,2-Dichloroethene Groundwater Concentrations**  
**WRR Facility, Columbia City, IN**



## Trichloroethene Groundwater Concentrations WRR Facility, Columbia City, IN



## Vinyl Chloride Groundwater Concentrations WRR Facility, Columbia City, IN



**Table 2**  
**City of Columbia City, Indiana**  
**Wayne Reclamation & recycling Facility**  
**Groundwater Elevations & Well Data**

Well No.	TOC Elevation (feet amsl)	Depth to Water (feet BTOC)					
		12/13/99	6/29/00	12/5/00	6/4/01	10/25/01	4/22/02
GM-1	841.03	31.26	30.19	31.61	30.31	29.54	29.24
GM-2	833.24	23.65	22.08	23.60	22.18	21.45	21.12
GM-3	822.86	11.74	10.69	12.45	11.73	8.46	10.51
GM-4	827.37	16.54	15.33	17.18	16.39	13.51	15.17
MW-4S	842.94	--	--	33.43	32.03	31.52	30.92

Well No.	TOC Elevation (feet amsl)	Groundwater Elevation (feet amsl)					
		12/13/99	6/29/00	12/5/00	6/4/01	10/25/01	4/22/02
GM-1	841.03	809.77	810.84	809.42	810.72	811.49	811.79
GM-2	833.24	809.59	811.16	809.64	811.06	811.79	812.12
GM-3	822.86	811.12	812.17	810.41	811.13	814.40	812.35
GM-4	827.37	810.83	812.04	810.19	810.98	813.86	812.20
MW-4S	842.94	--	--	809.51	810.91	811.42	812.02

Well No.	TOC Elevation (feet amsl)	Well Stick-Up (feet)					
		12/13/1999	6/29/2000	12/5/2000	6/4/2001	10/25/2001	4/22/2002
GM-1	841.03	2.1	--	1.9	1.9	2.1	1.8
GM-2	833.24	2.5	--	2.2	2.2	2.5	2.2
GM-3	822.86	2.2	--	2.0	2.0	2.3	1.9
GM-4	827.37	3.3	--	2.6	2.6	3.0	2.5
MW-4S	842.94	--	--	--	--	3.0	2.6

Well No.	TOC Elevation (feet amsl)	Depth-to-Bottom (feet BTOC)					
		12/13/1999	6/29/2000	12/5/2000	6/4/2001	10/25/2001	4/22/2002
GM-1	841.03	35.10	34.84	34.84	34.84	34.86	34.81
GM-2	833.24	39.08	38.87	38.86	38.86	38.88	38.83
GM-3	822.86	27.95	27.72	27.75	27.75	27.74	27.71
GM-4	827.37	28.17	27.93	27.95	27.95	27.95	27.91
MW-4S	842.94	--	--	39.74	39.74	40.93	40.88

Data prior to 12/99 unavailable.

TOC = Top of casing elevation reported by Geraghty & Miller SAP.

amsl = above mean sea level.

BTOC = below top of casing